**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**“JnanaSangama”, Belgaum -590014, Karnataka.**



**LAB REPORT**

**on**

# COMPUTER NETWORKS

***Submitted by***

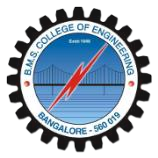
**RASHTRI KM (1BM21CS162)**

***in partial fulfillment for the award of the degree of***

**BACHELOR OF ENGINEERING**

***in***

## COMPUTER SCIENCE AND ENGINEERING



**B.M.S. COLLEGE OF ENGINEERING**

**(Autonomous Institution under VTU)**

**BENGALURU-560019**

**June-2023 to September-2023**

**B. M. S. College of Engineering,**

**Bull Temple Road, Bangalore 560019**

(Affiliated To Visvesvaraya Technological University, Belgaum)

### Department of Computer Science and Engineering



**CERTIFICATE**

This is to certify that the Lab work entitled “COMPUTER NETWORKS” carried out by

**RASHTRI K.M(1BM21CS162),** who is bonafide student of **B.M.S. College of**

**Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the academic semester June-2023 to September-2023. The Lab report has been approved as it satisfies the academic requirements in respect of a **COMPUTER NETWORKS (22CS4PCCON)** work prescribed for the said degree.

**Dr. Nandini vineeth**  **Dr. Jyothi S Nayak**

Assistant Professor Professor and Head

Department of CSE Department of CSE

BMSCE, Bengaluru BMSCE, Bengaluru

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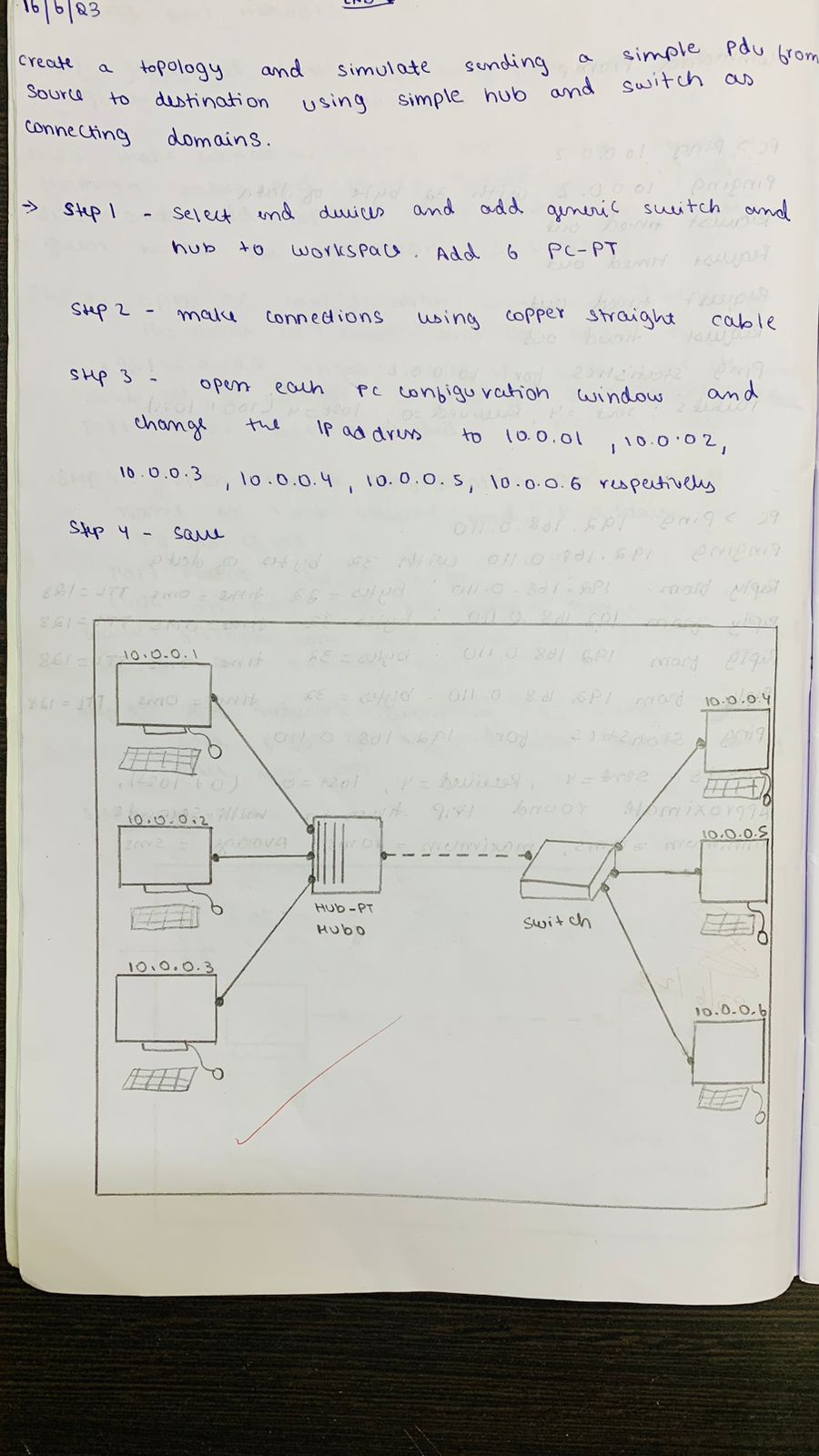
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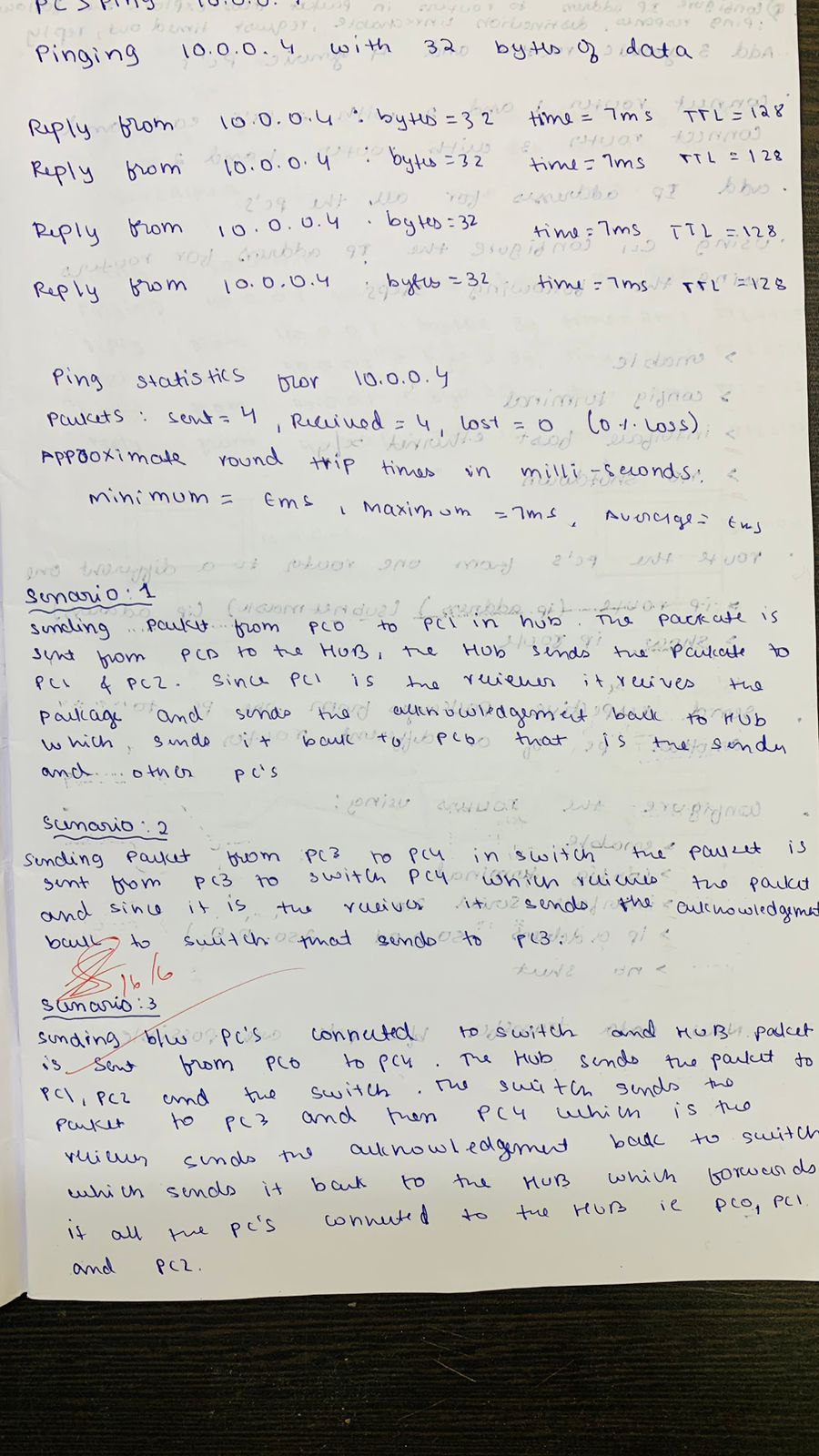
**Course Outcomes**

|  |  |
| --- | --- |
| **CO1** | Apply the fundamental concepts of communication in networking. |
| **CO2** | Analyze the various protocols, techniques in TCP/IP network architectur |
| **CO3** | Develop programs that demonstrate the functionalities of physical, Data Link, Network, Transport or Application layer |

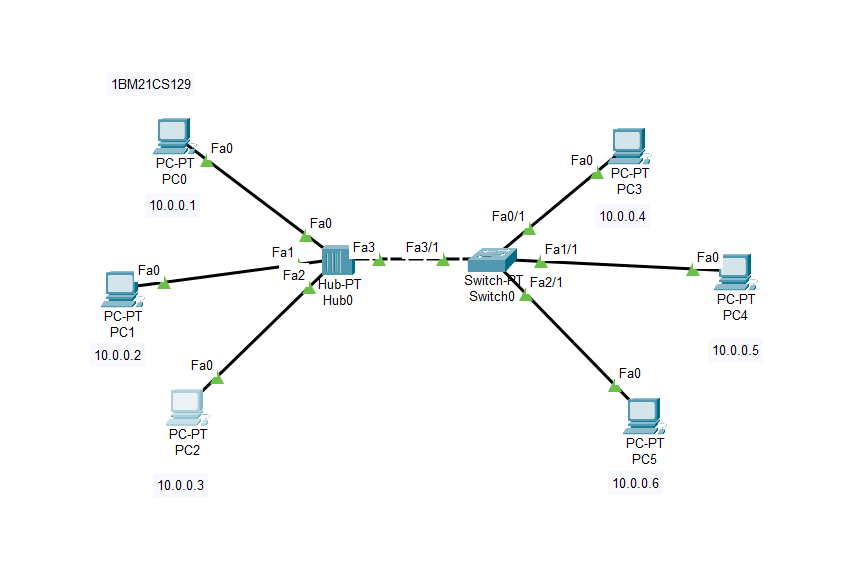
**Experiment 1**

**Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping message.**

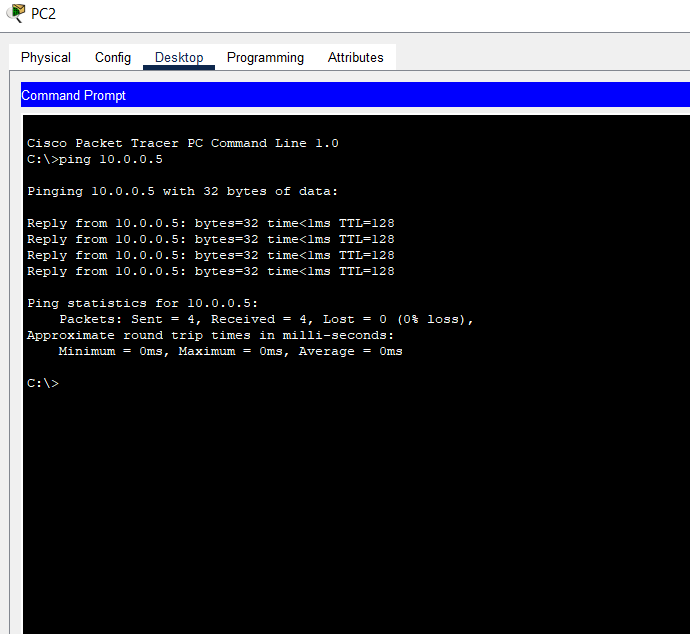




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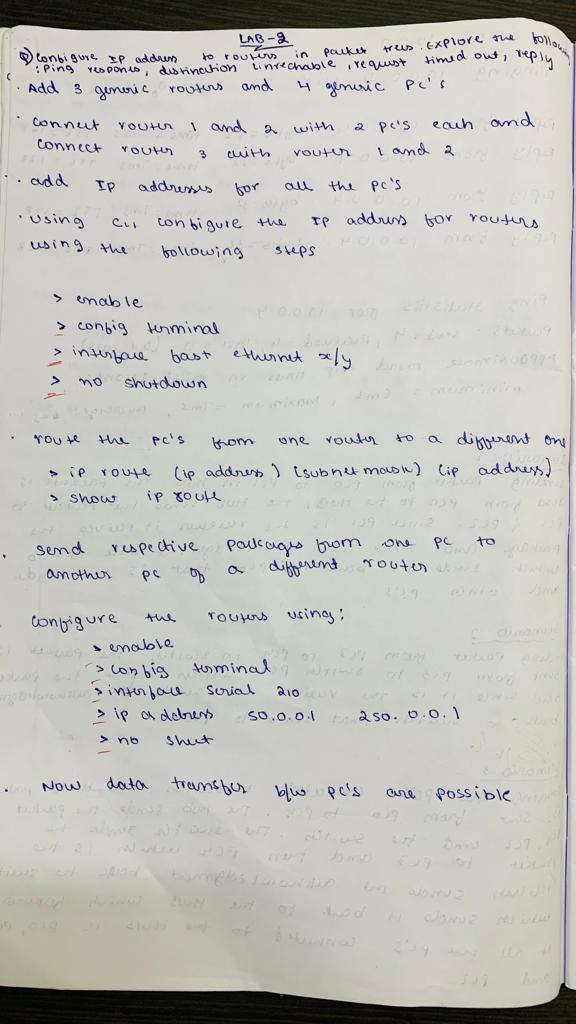
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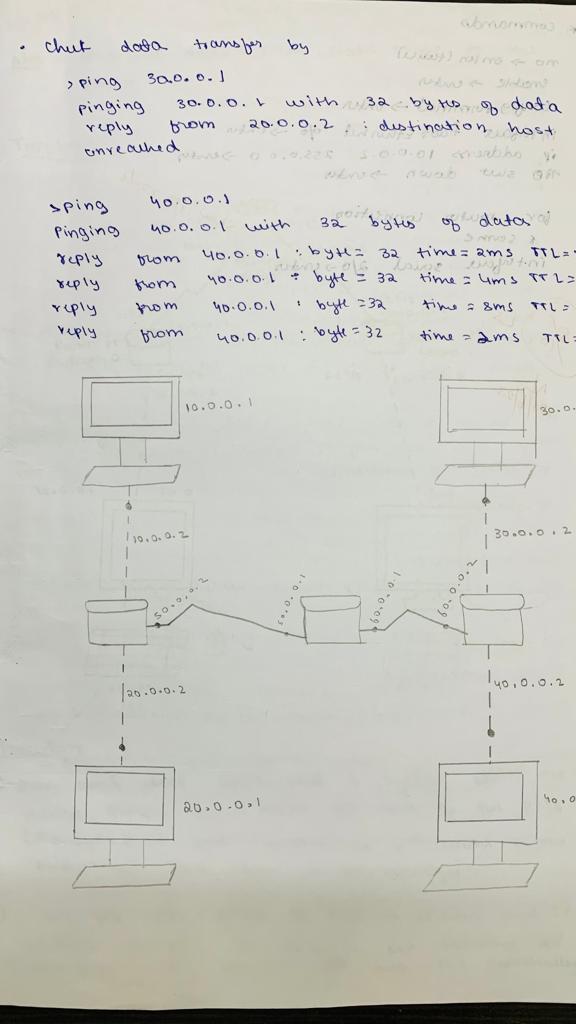
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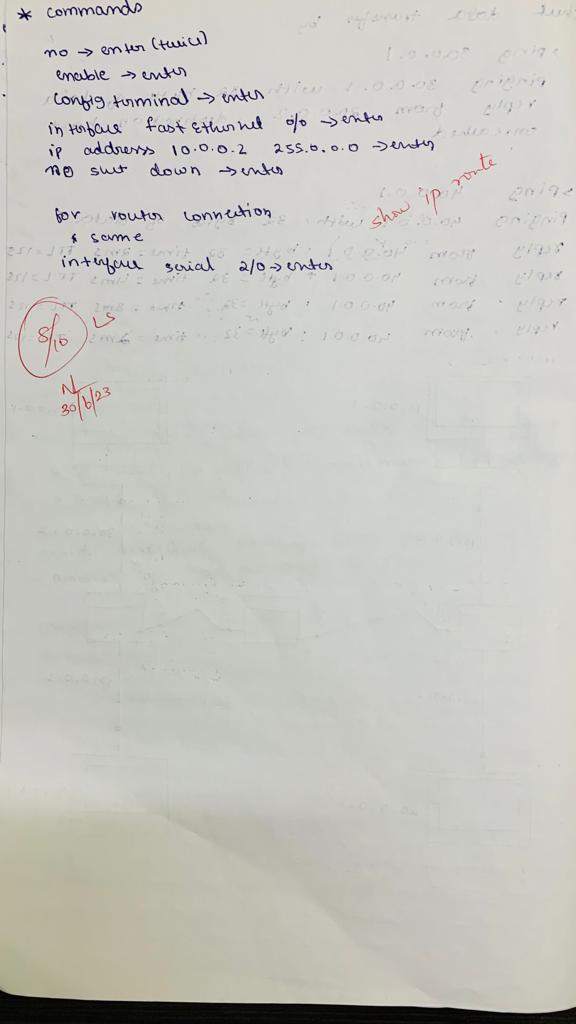
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**Experiment 2**

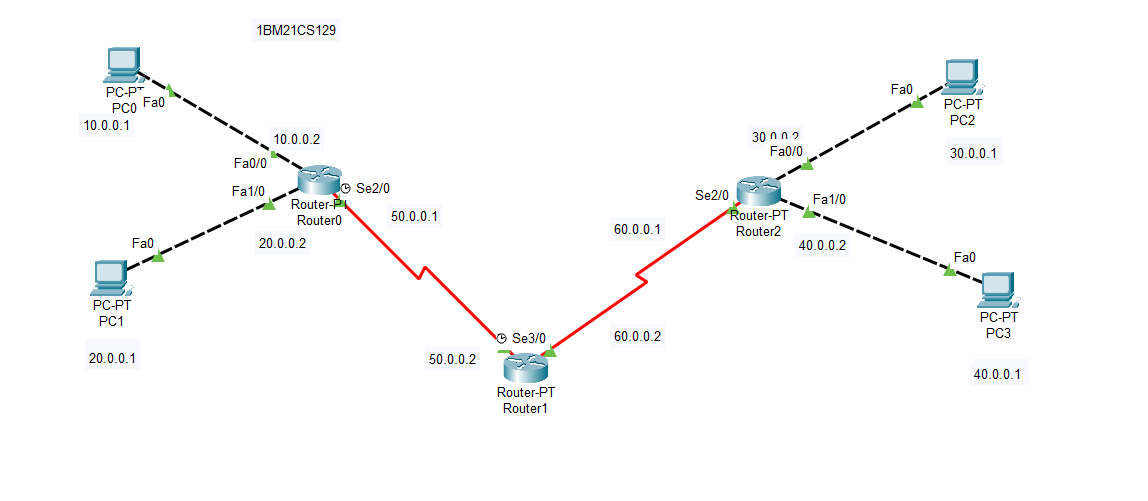
**Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply**



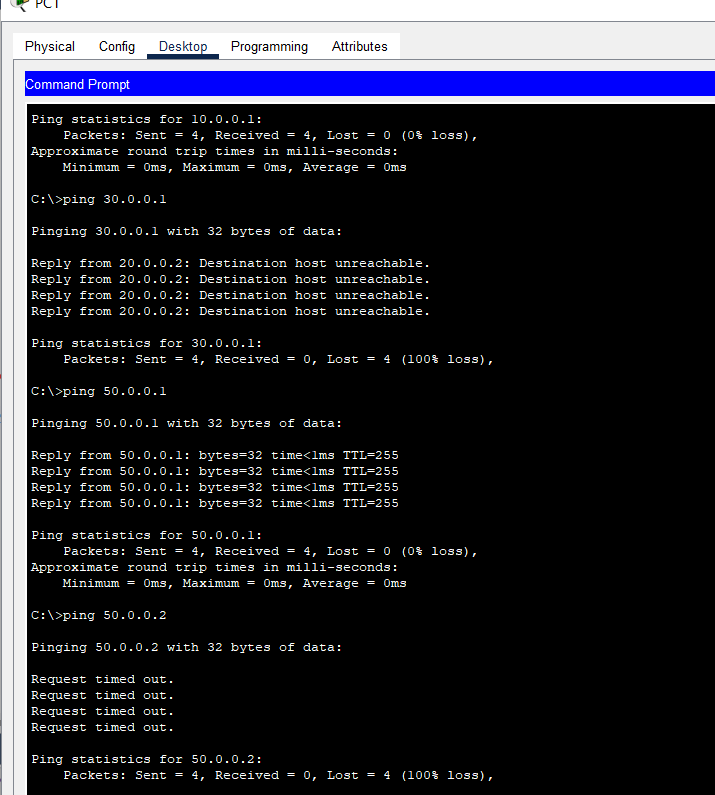




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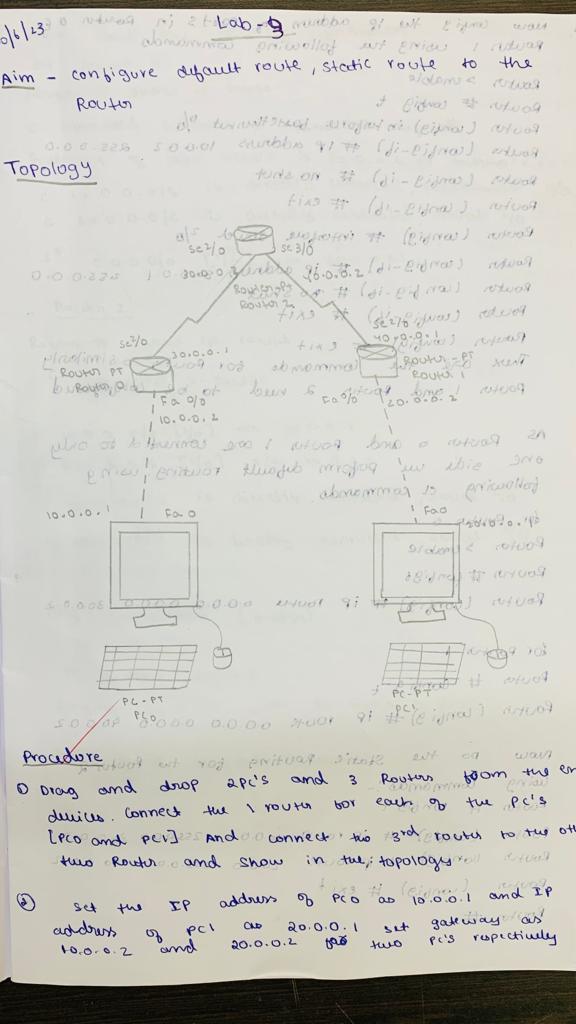
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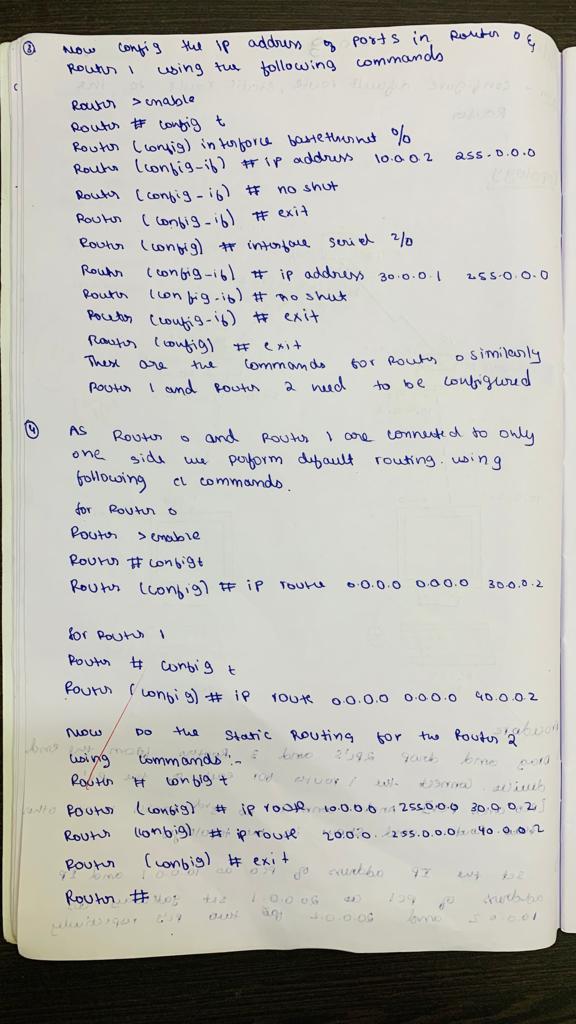
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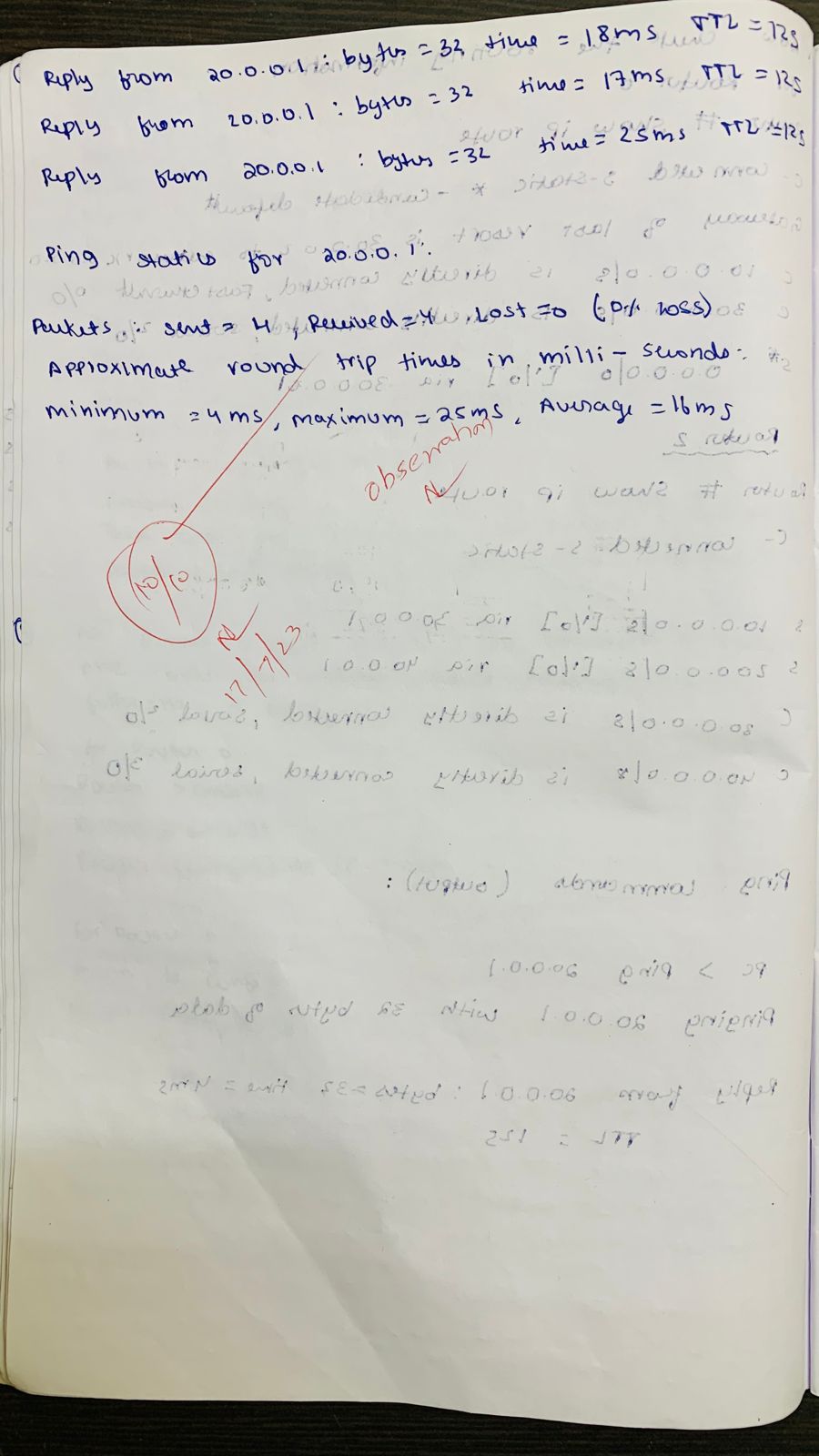
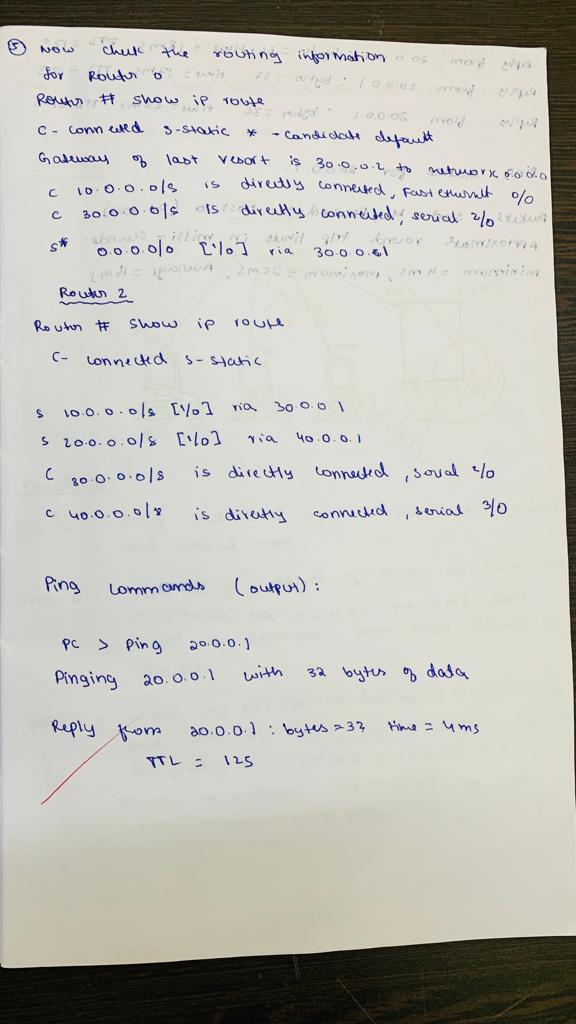
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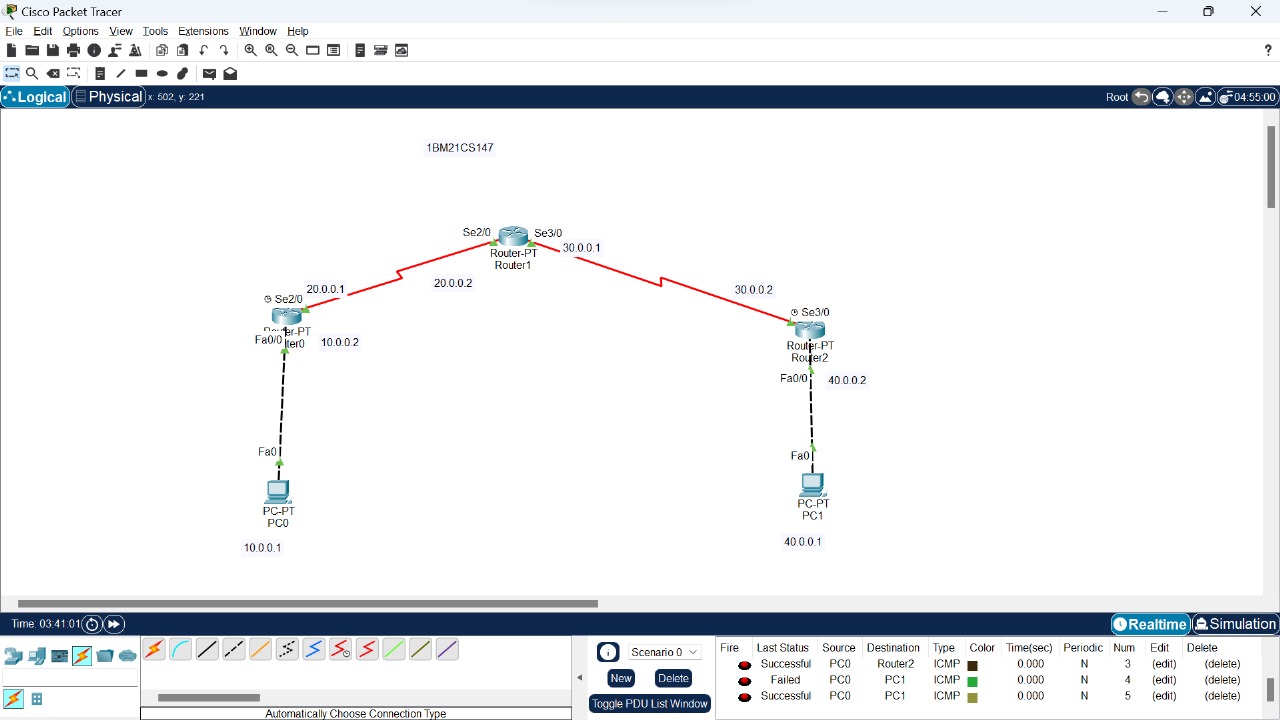
**Experiment 3**

**Configure default route, static route to the Router**

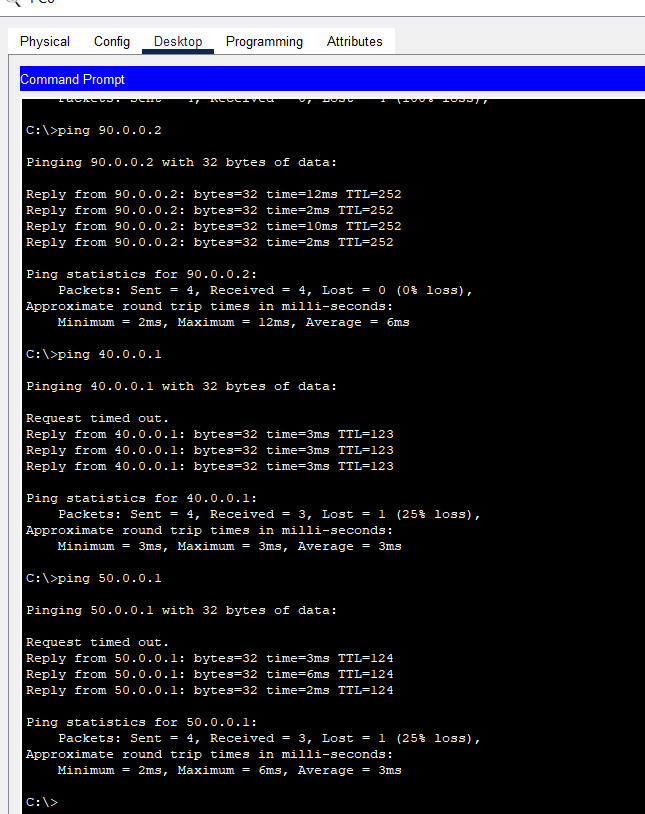




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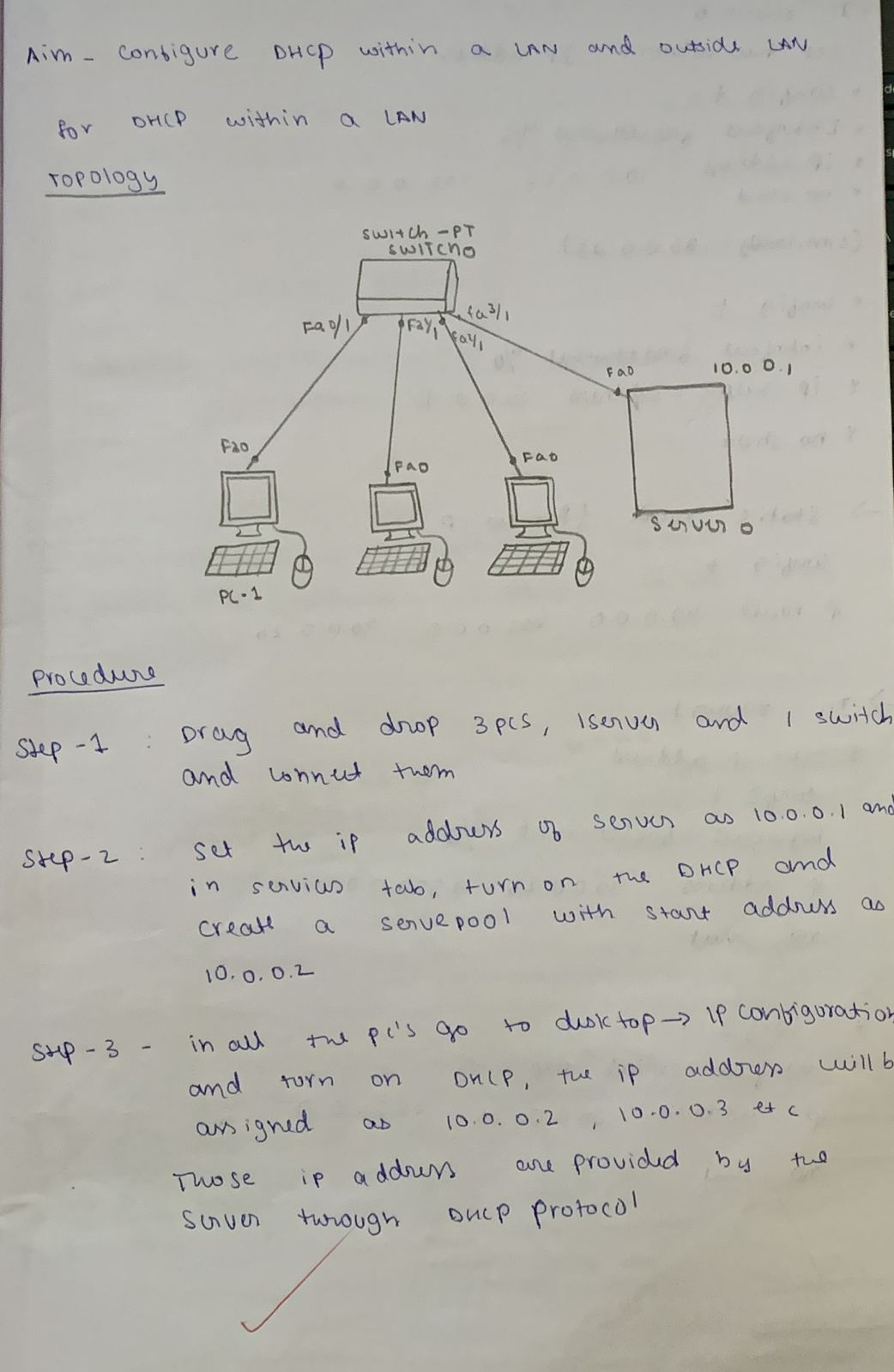


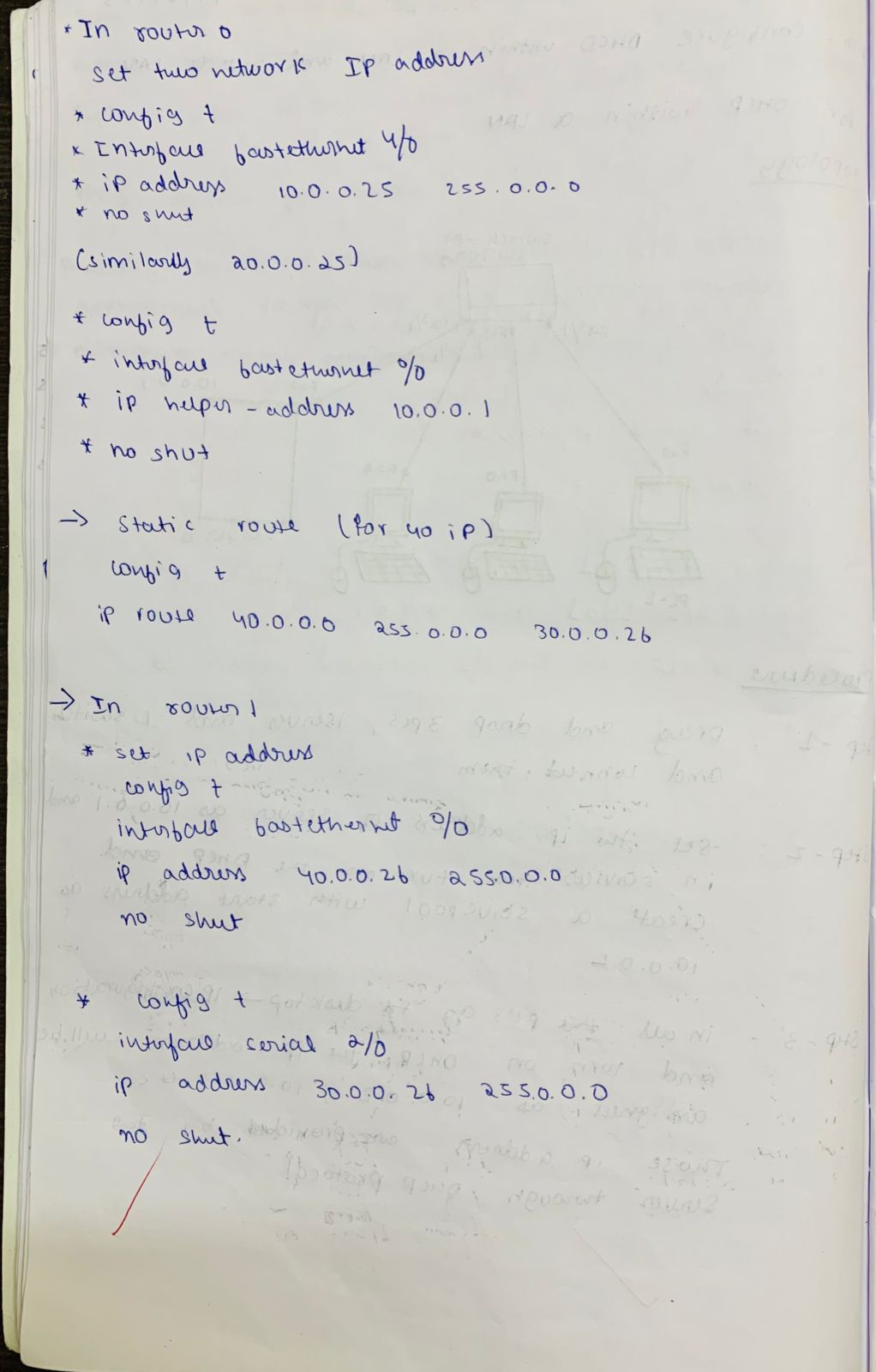
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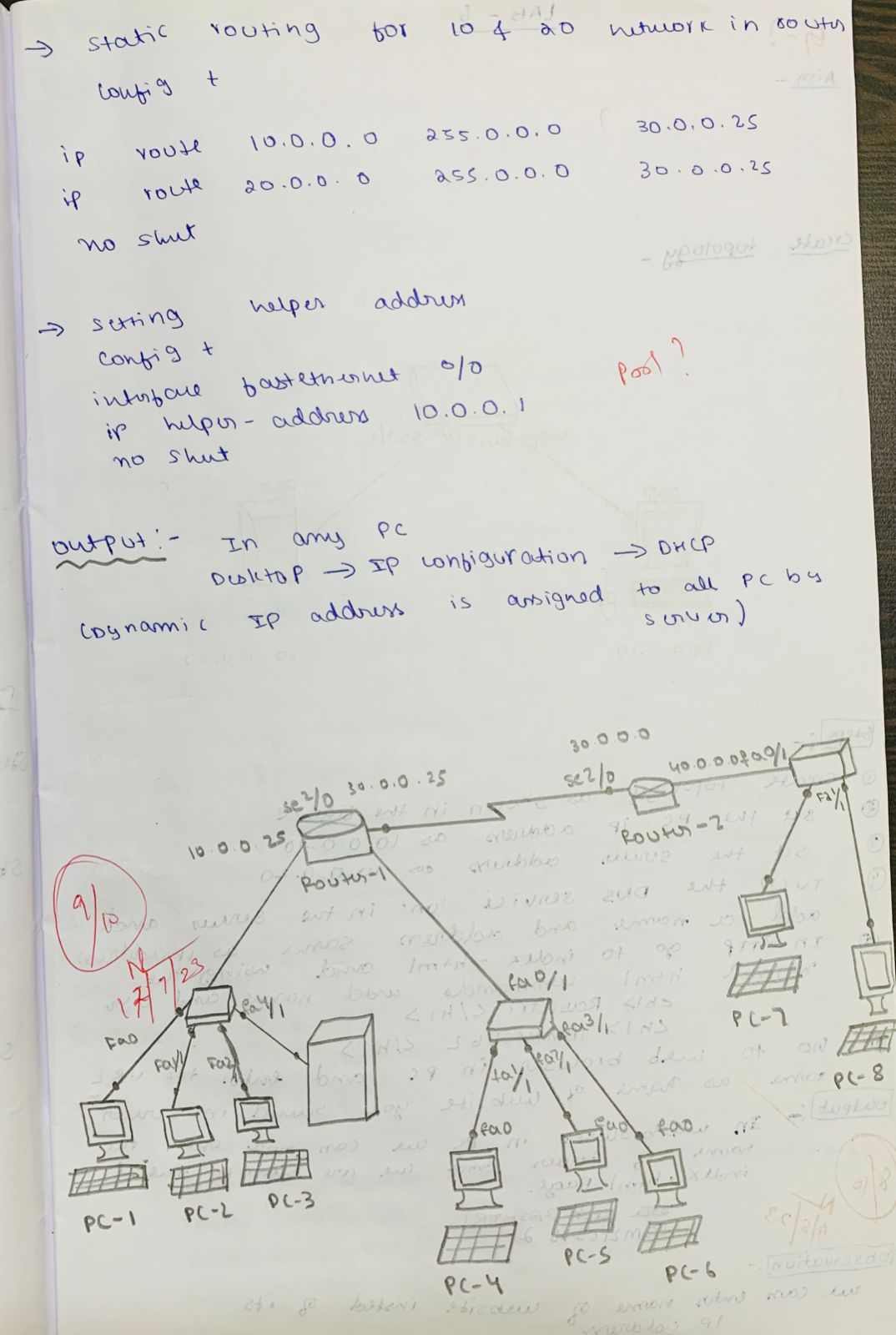
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**Experiment 4**

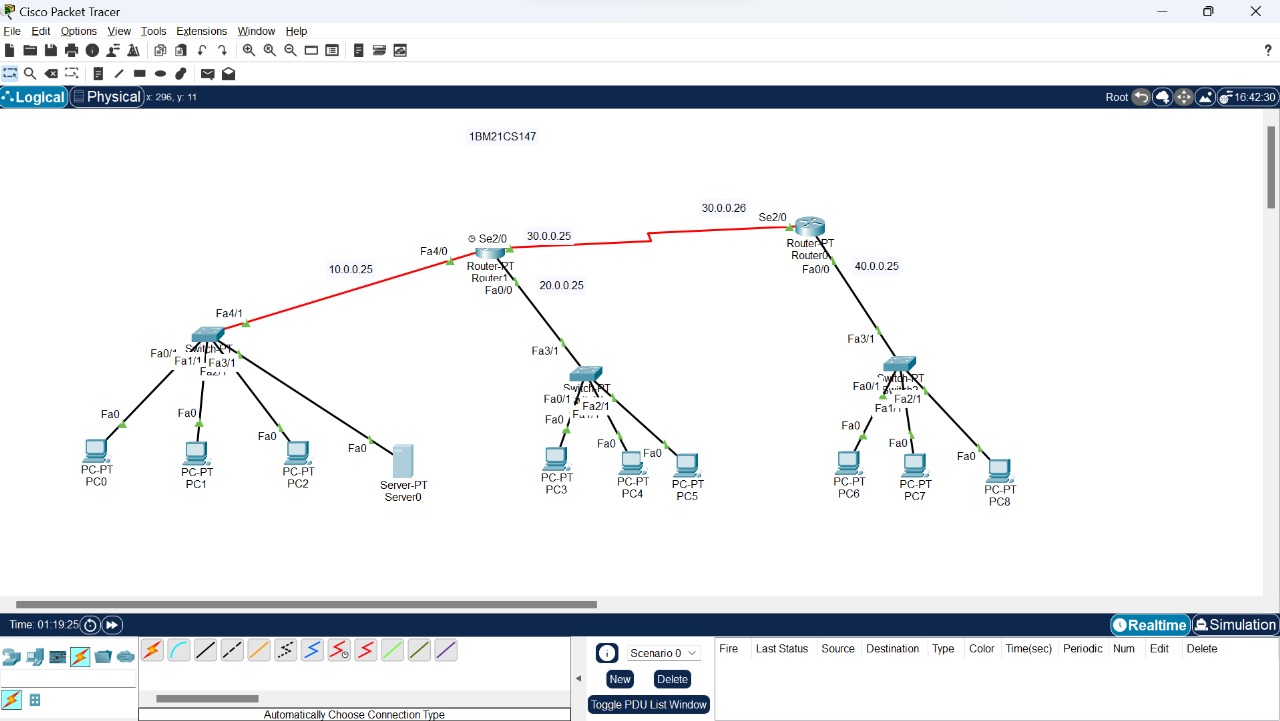
**Configure DHCP within a LAN and outside LAN**



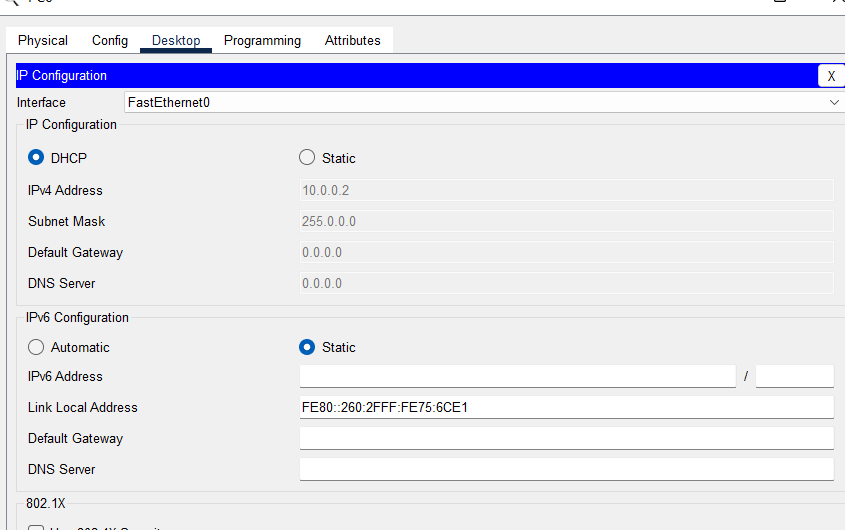




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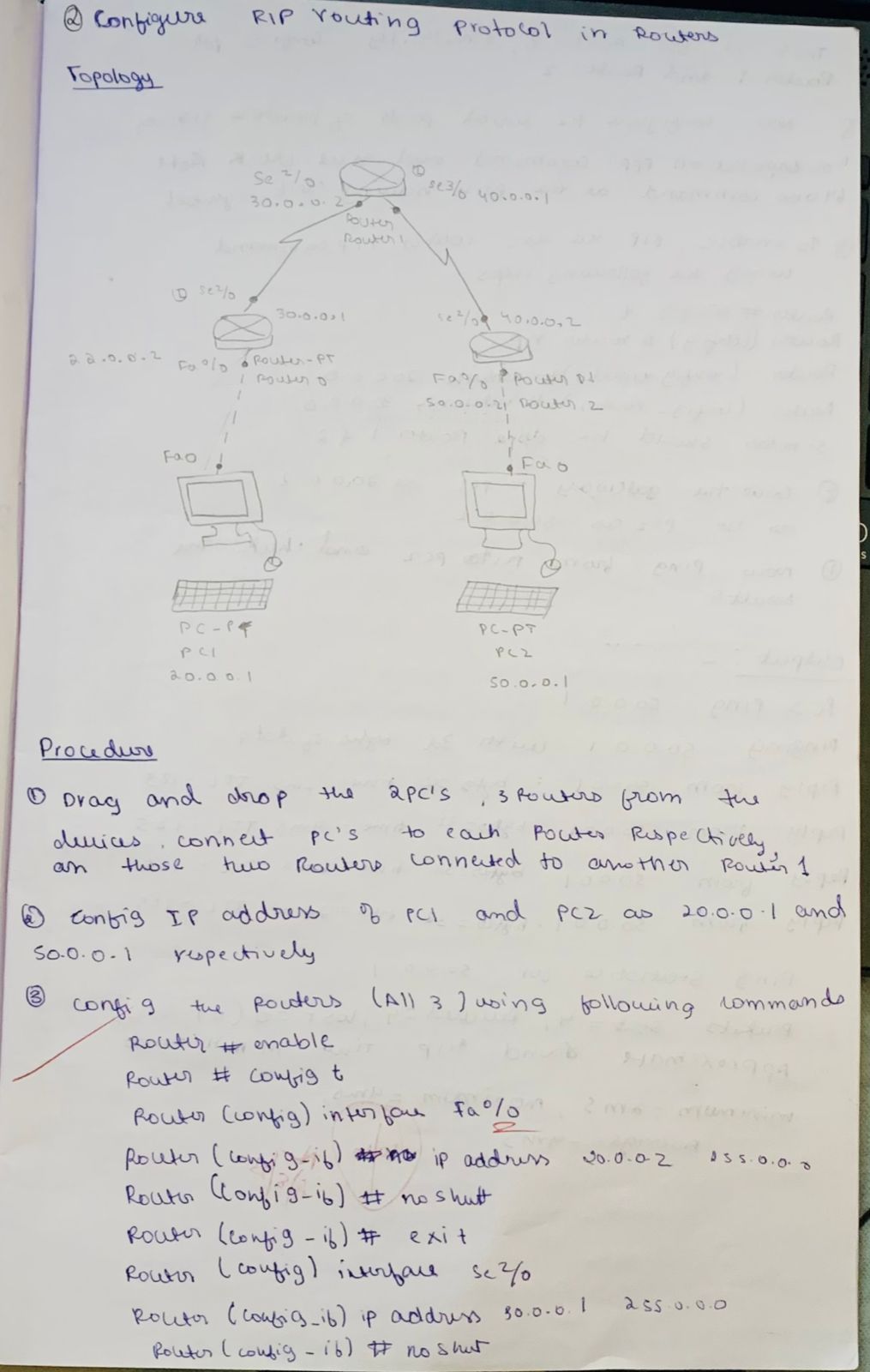


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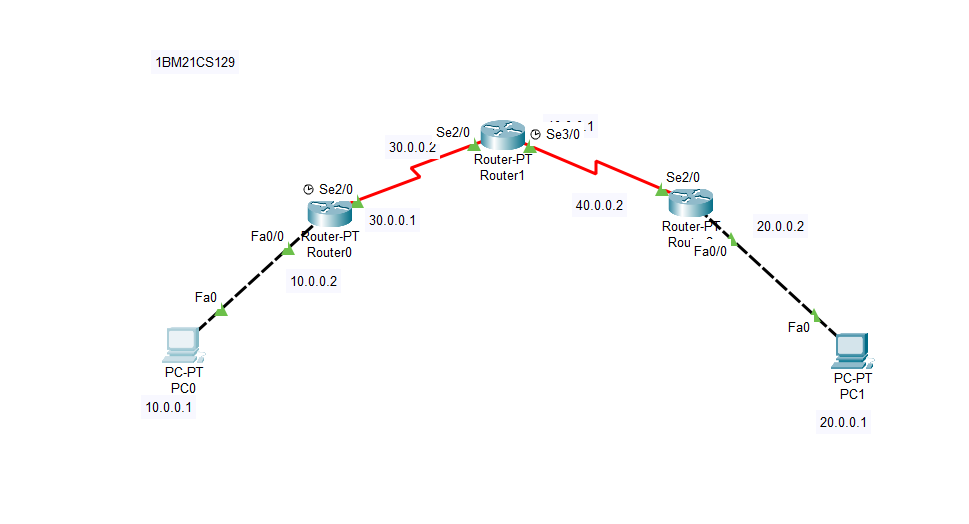
**Experiment 5**

**Configure RIP routing Protocol in Routers**

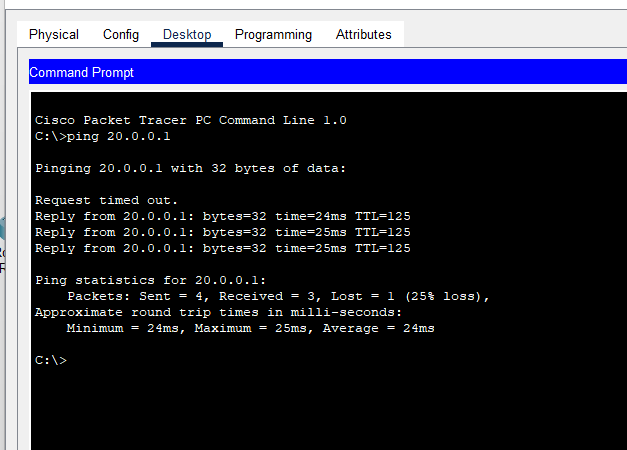




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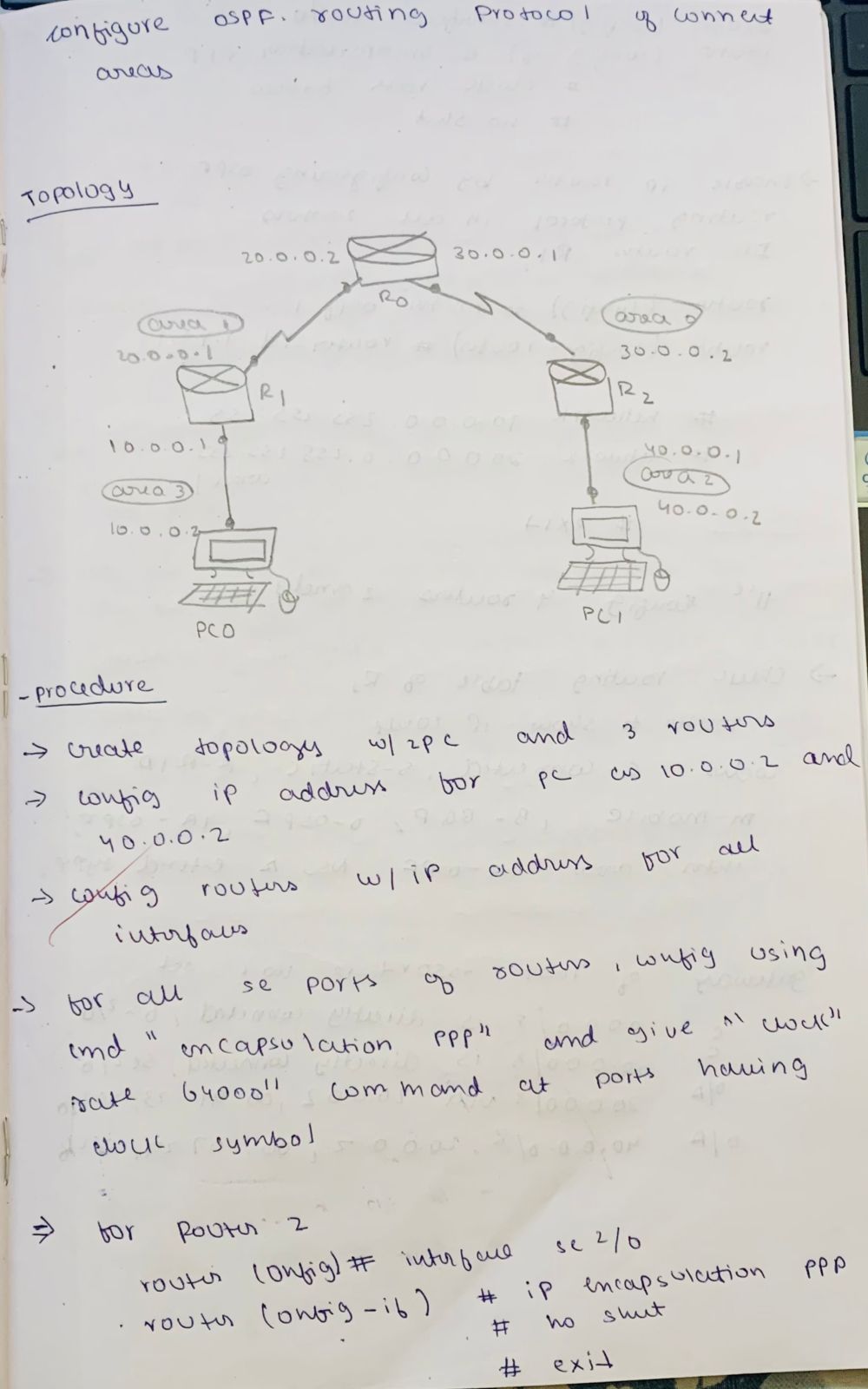
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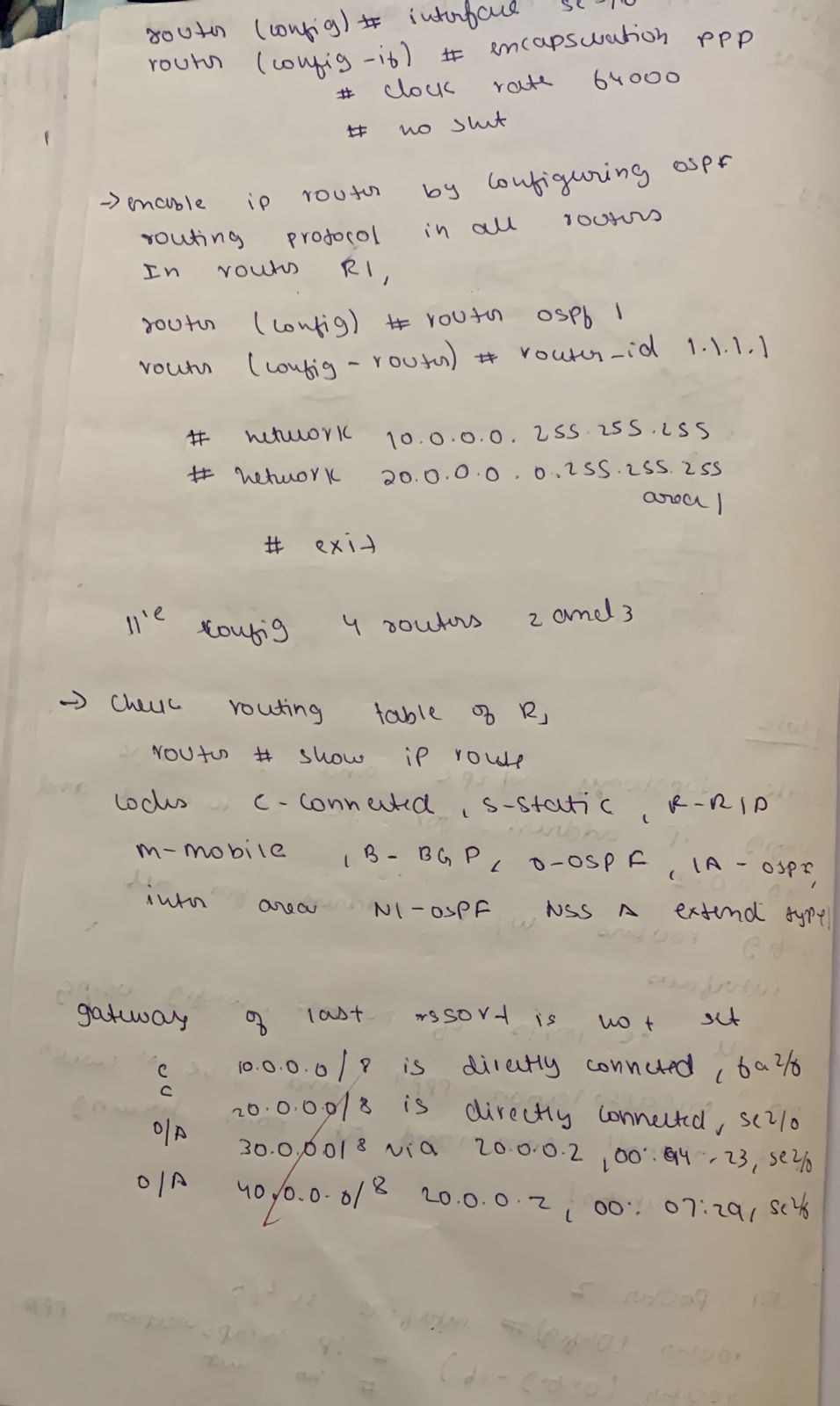
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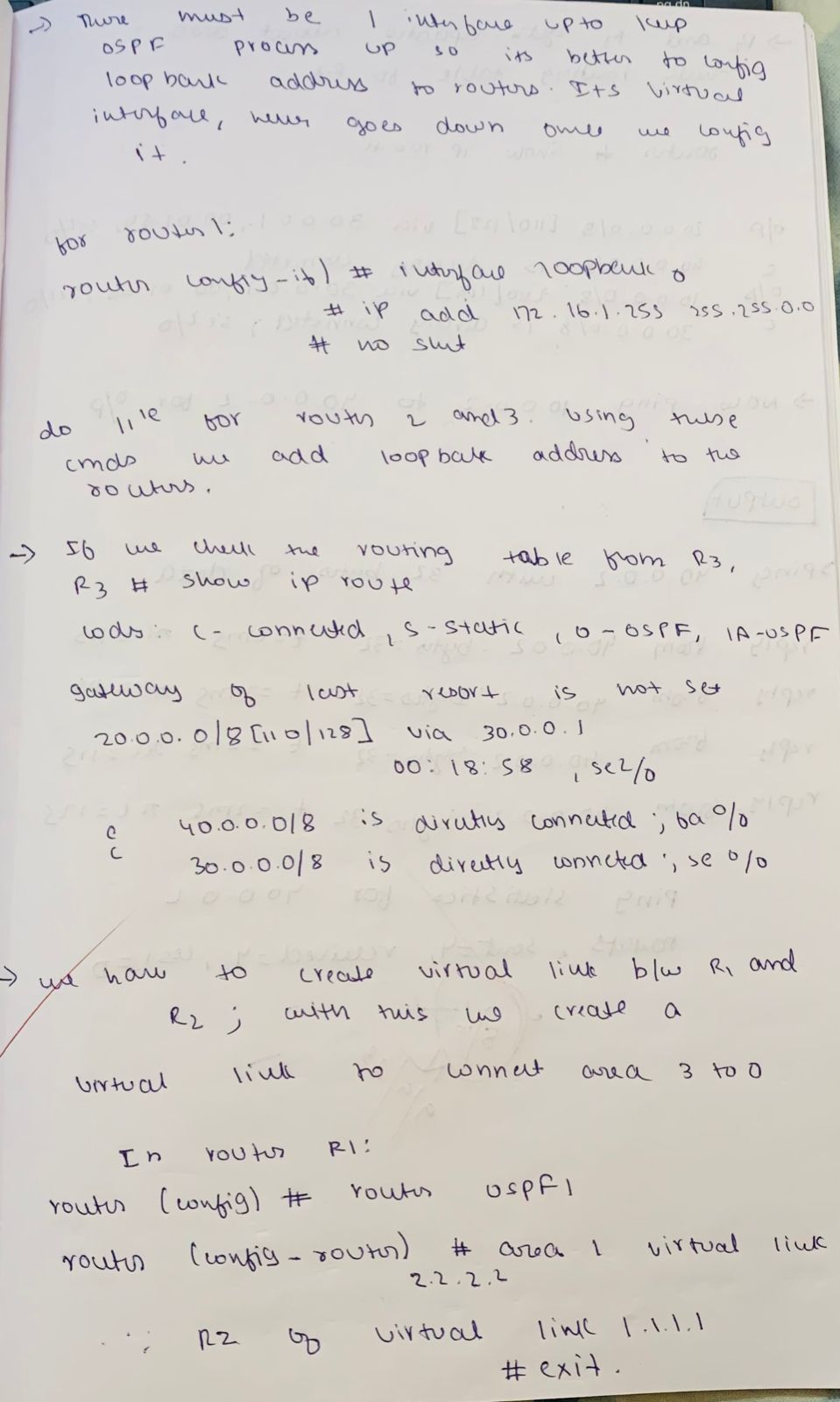
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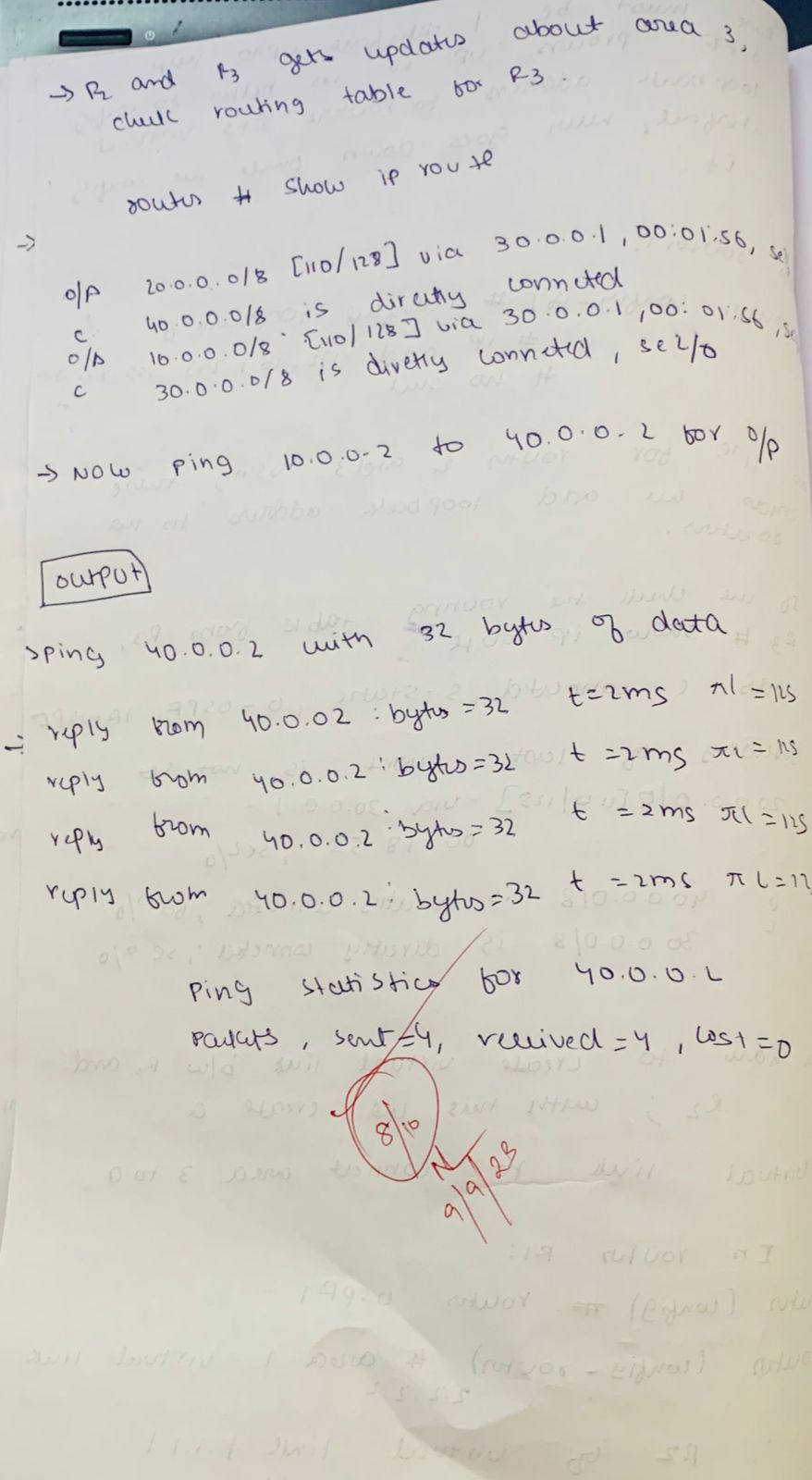
**Experiment 6**

**Configure OSPF routing protocol**



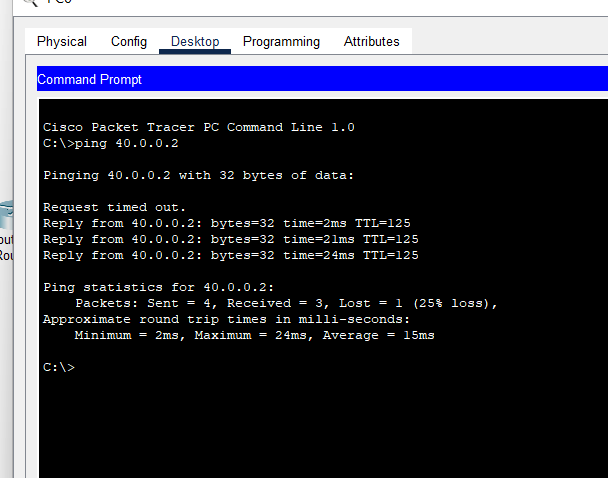




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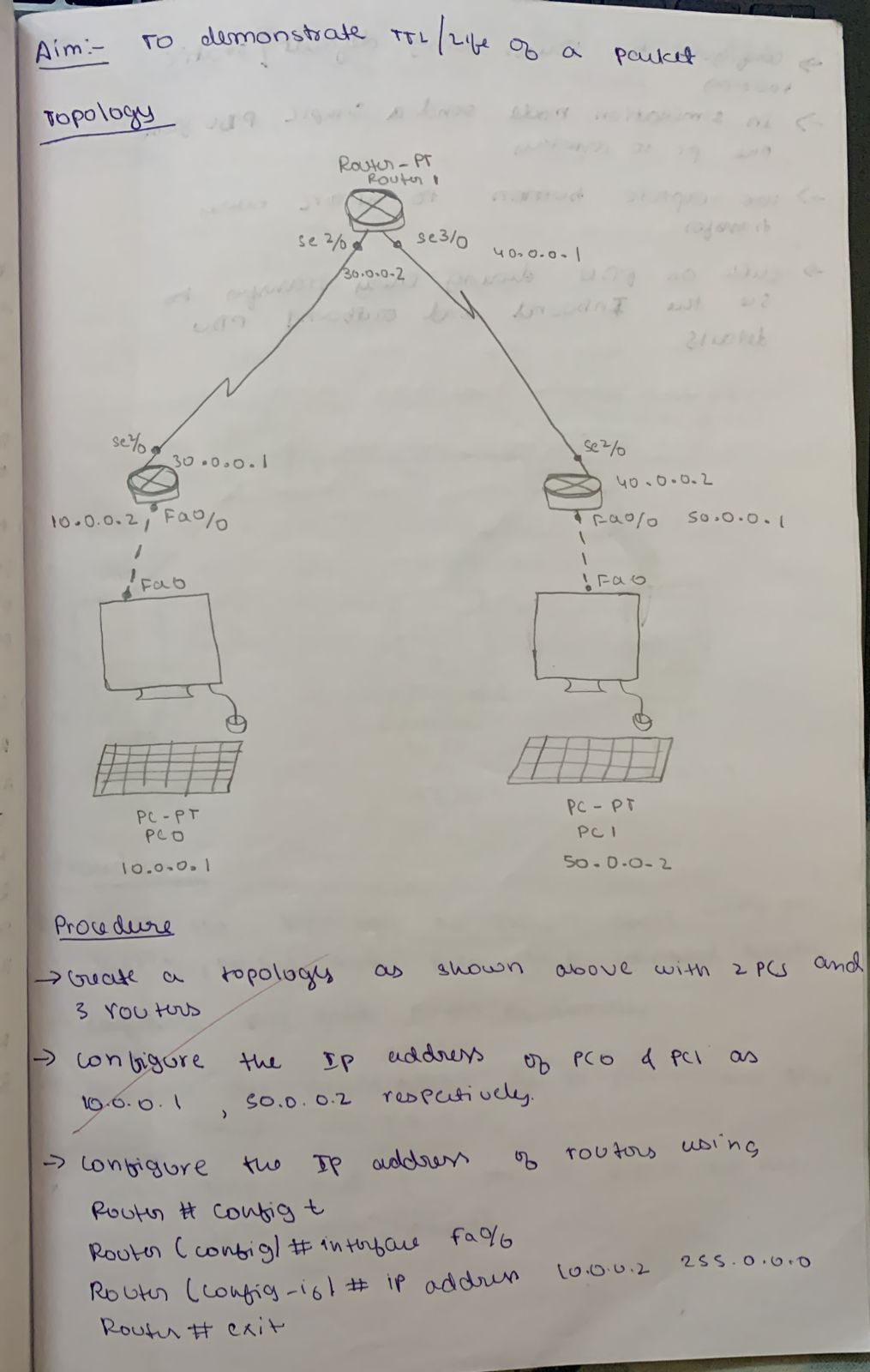
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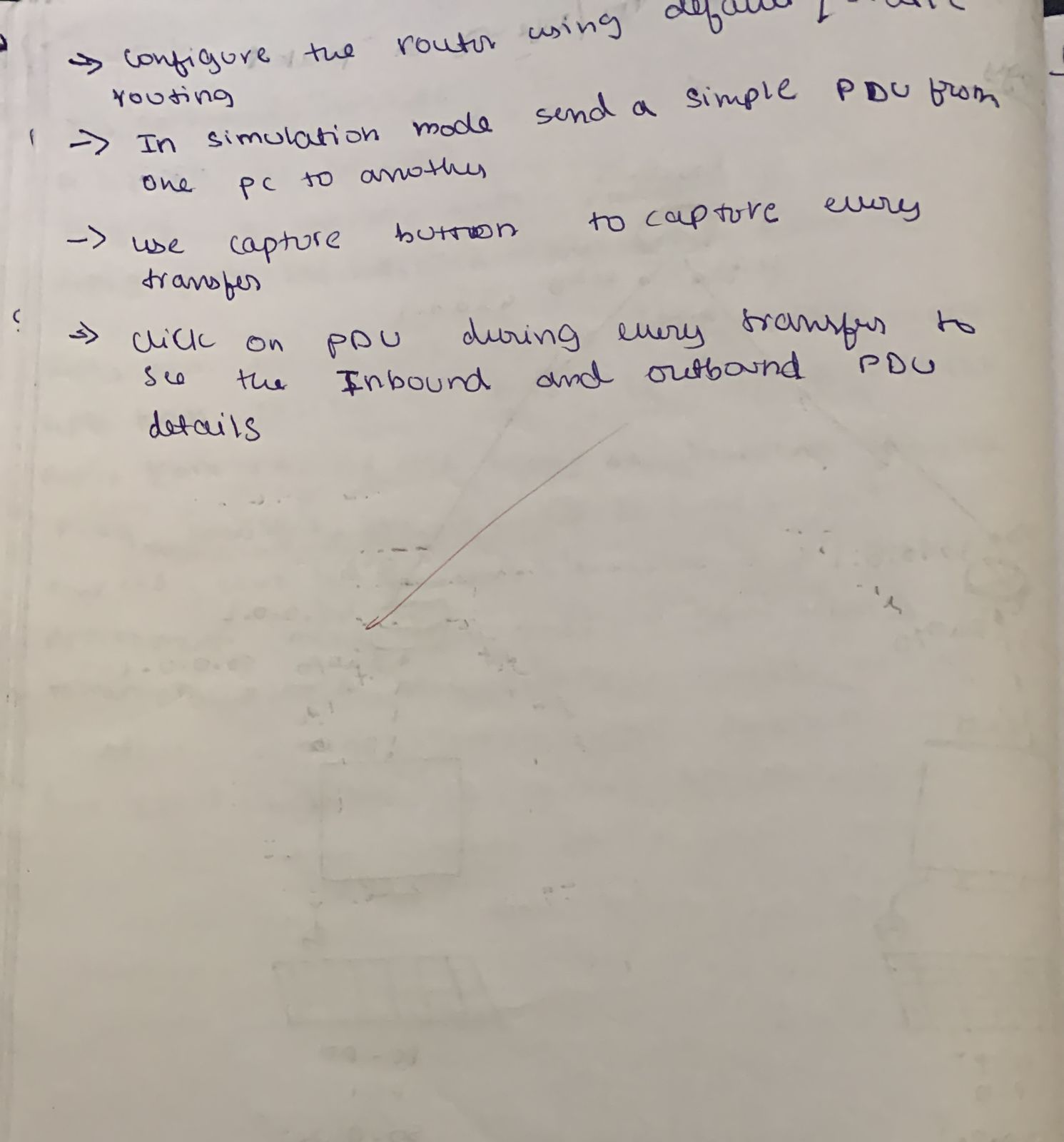
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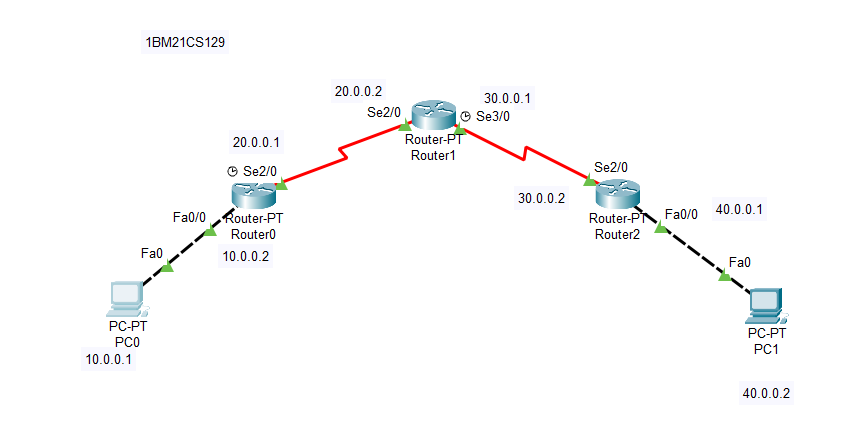
**Experiment 7**

**Demonstrate the TTL/ Life of a Packet**

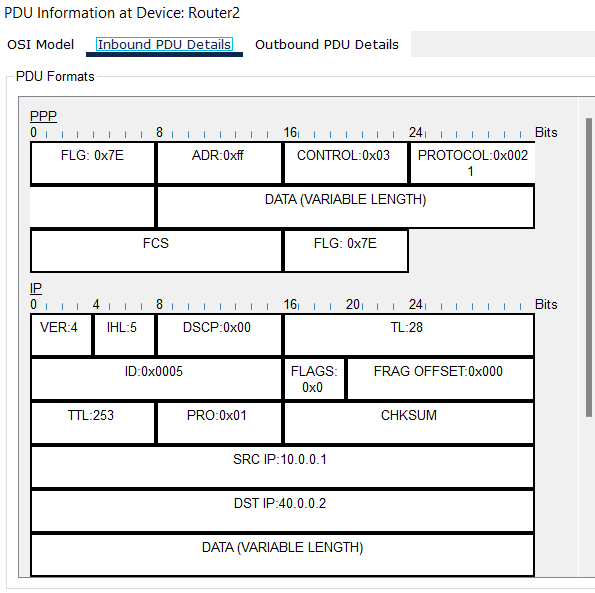


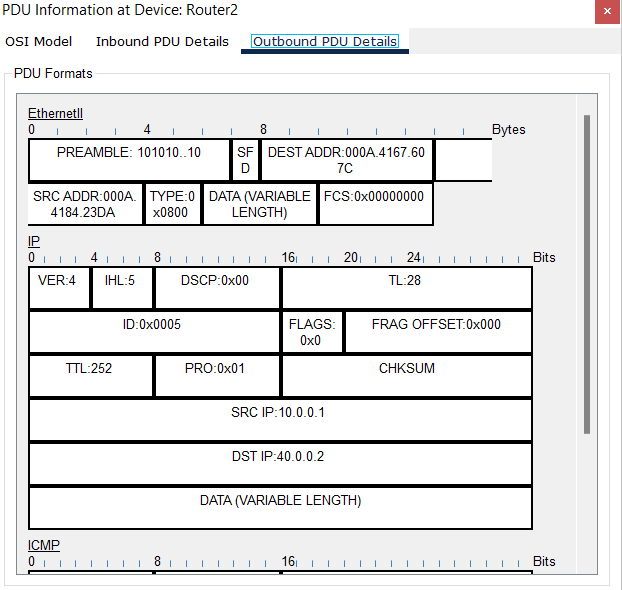


**Topology:**

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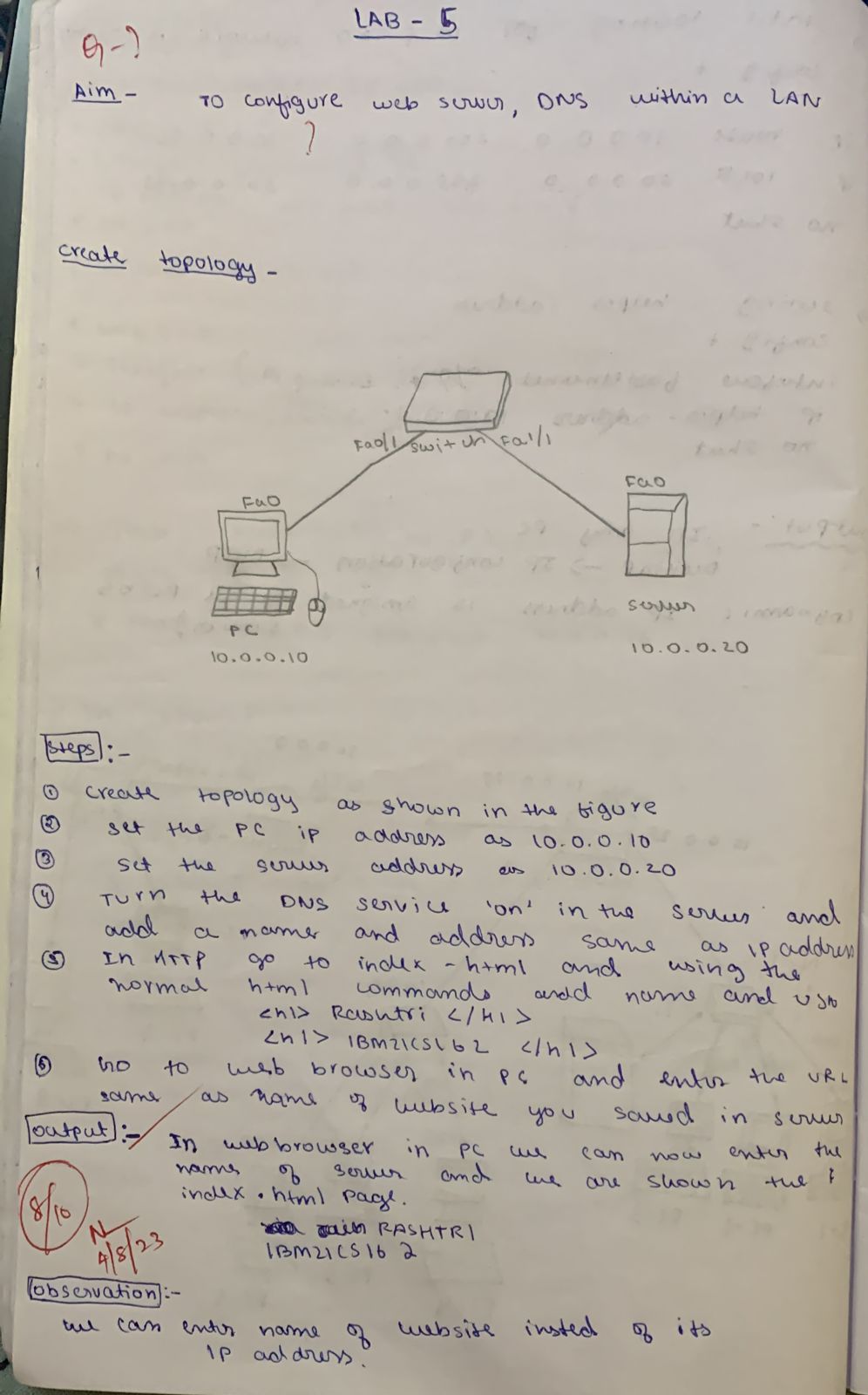
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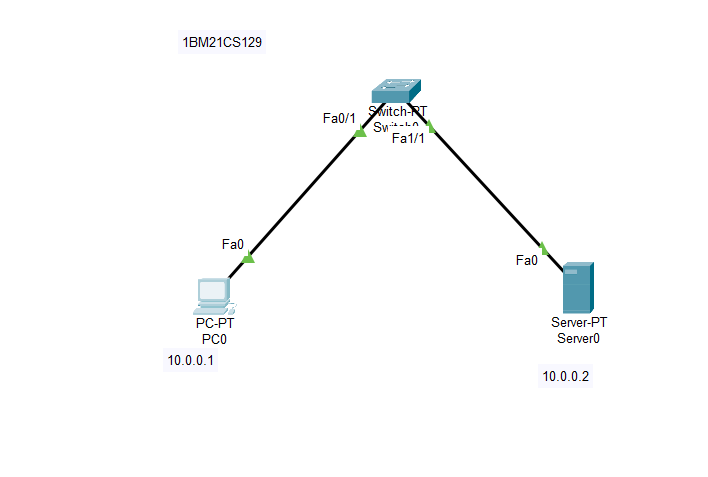
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**Experiment 8**

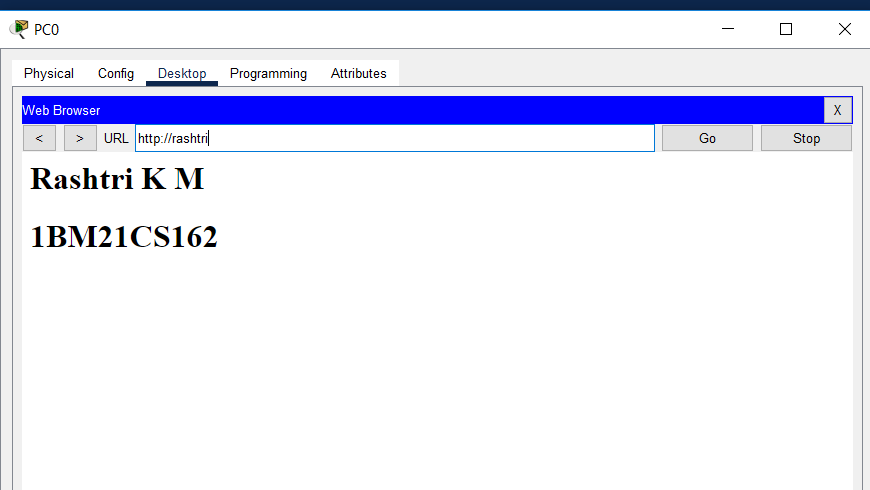
**Configure Web Server, DNS within a LAN.**



**Topology:**

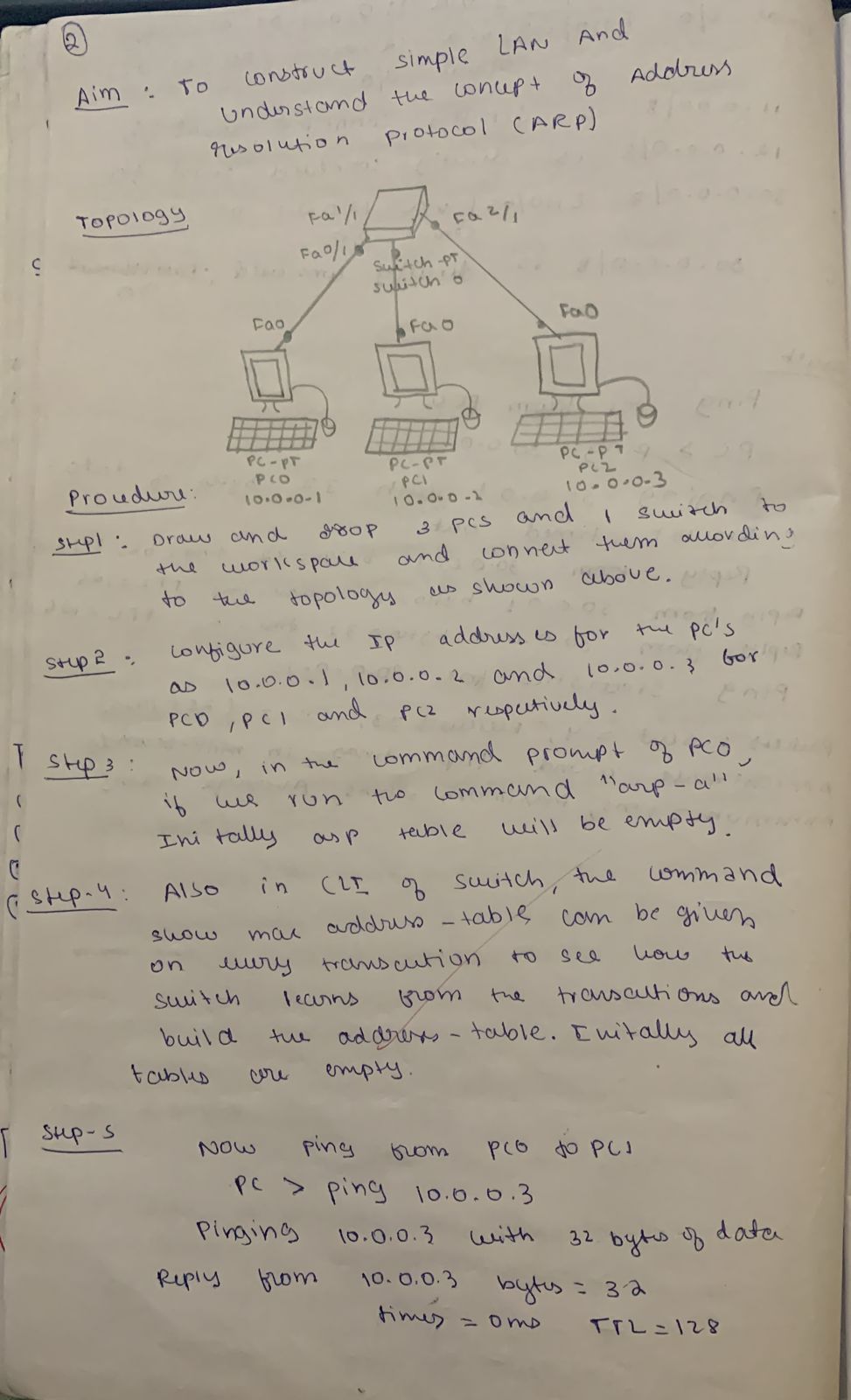
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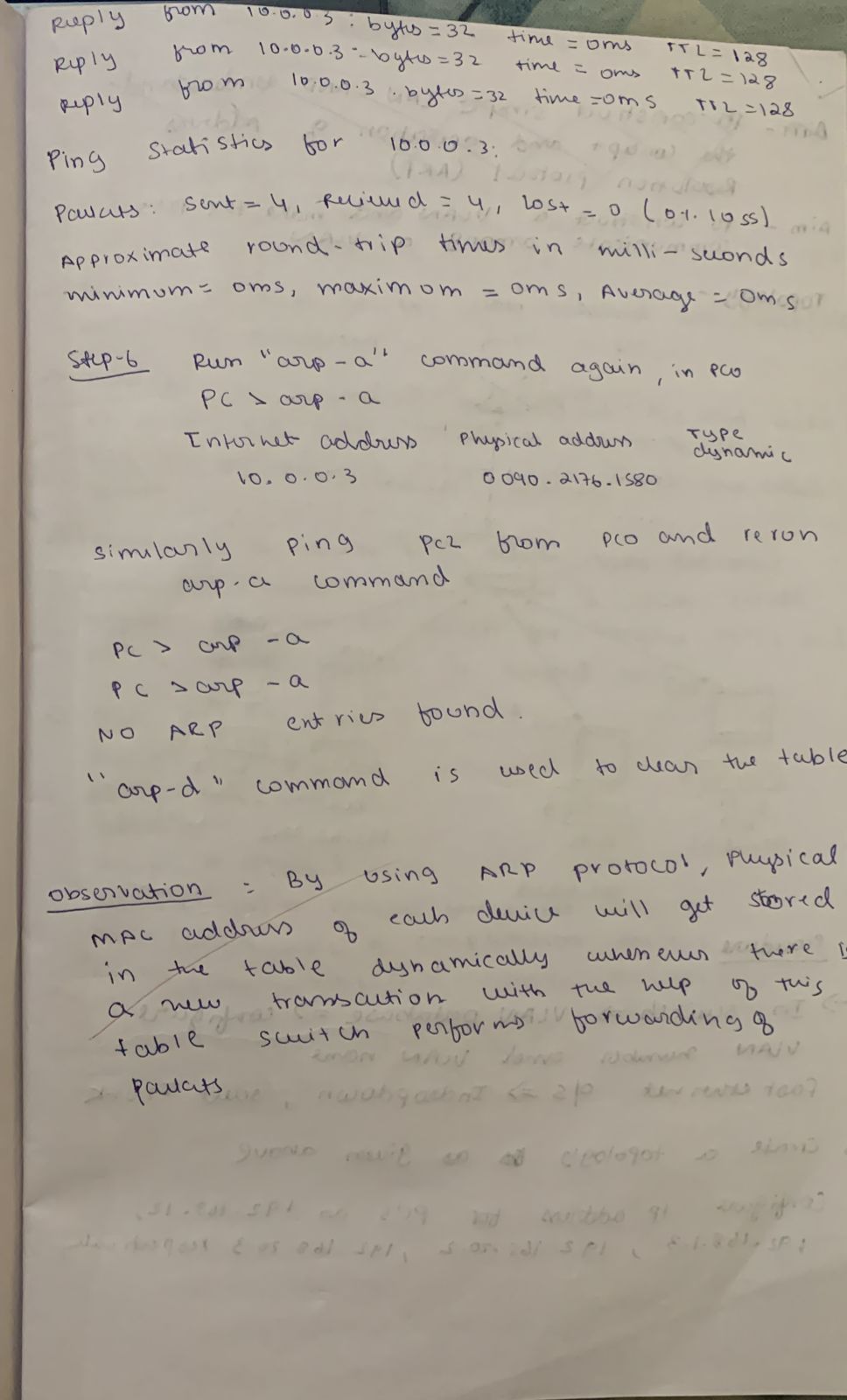
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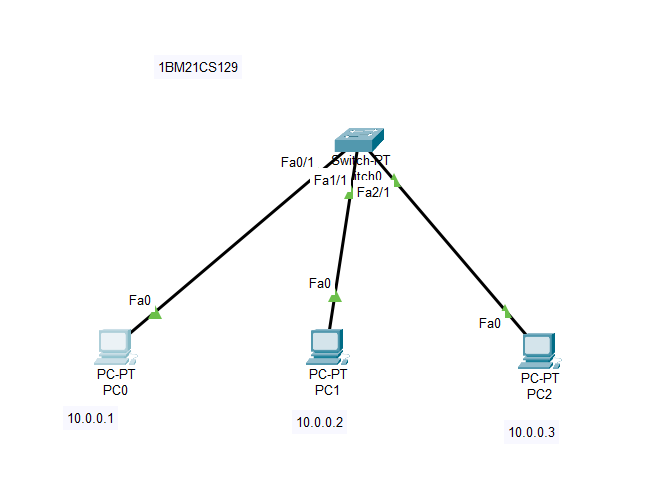


**Experiment 9**

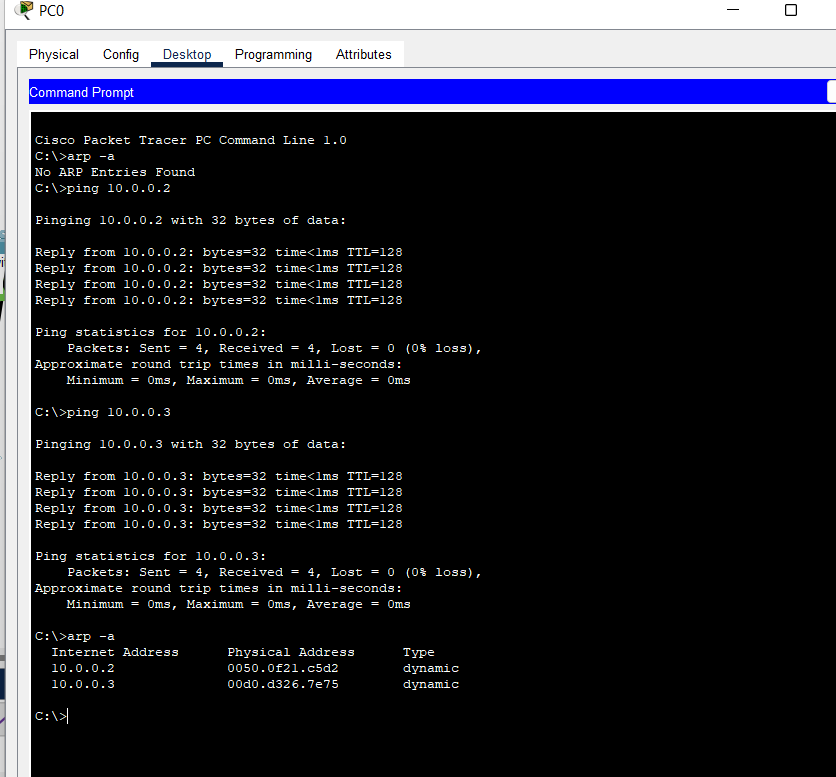
**To construct simple LAN and understand the concept and operation of Address Resolution Protocol (ARP)**



**Topology:**

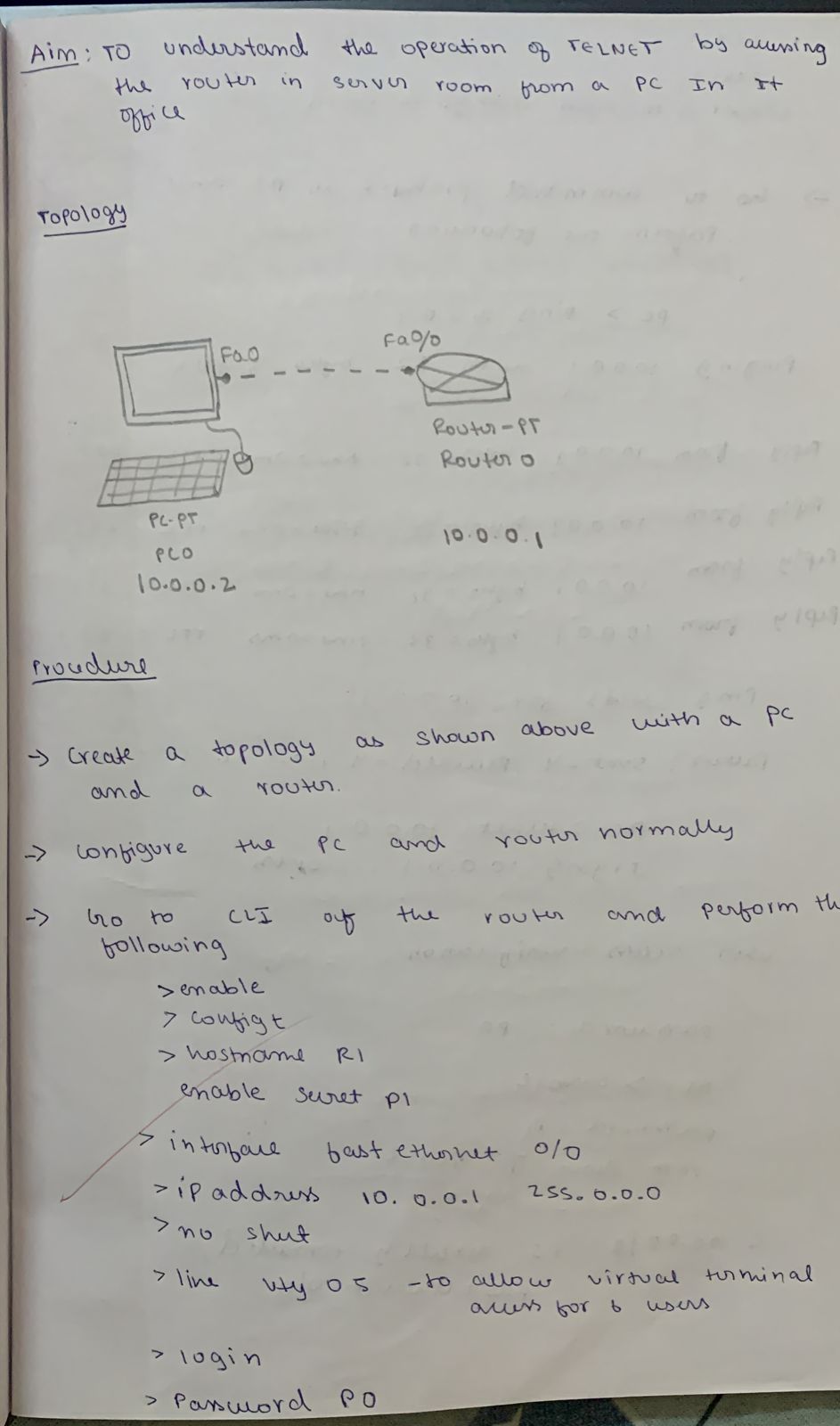
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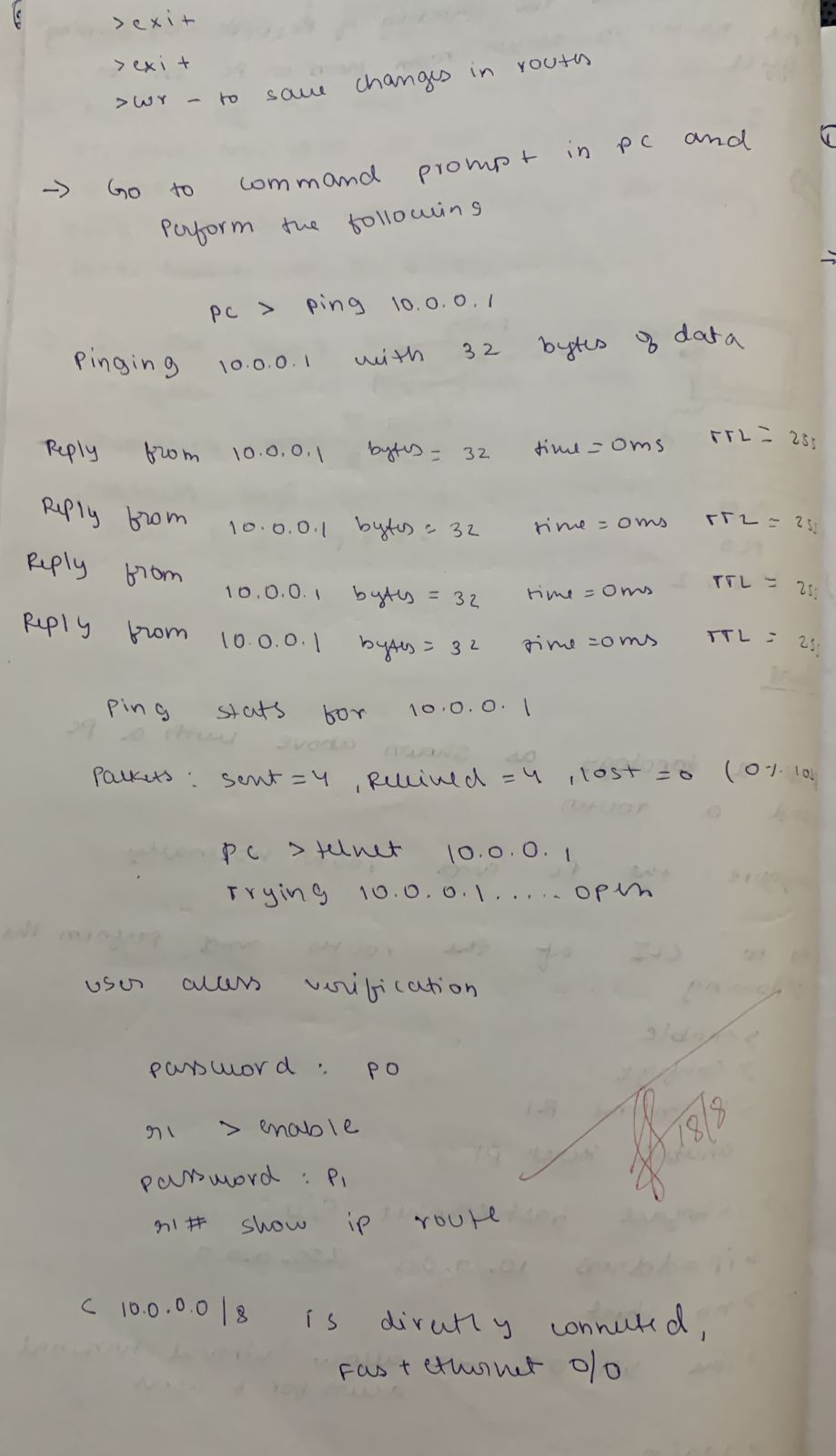
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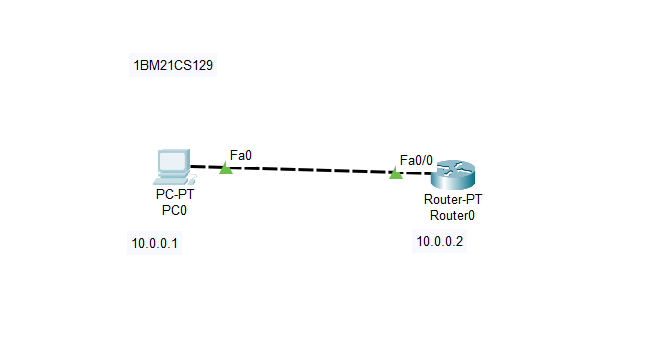
**Experiment 10**

**To understand the operation of TELNET by accessing the router in server room from a PC in IT office.**

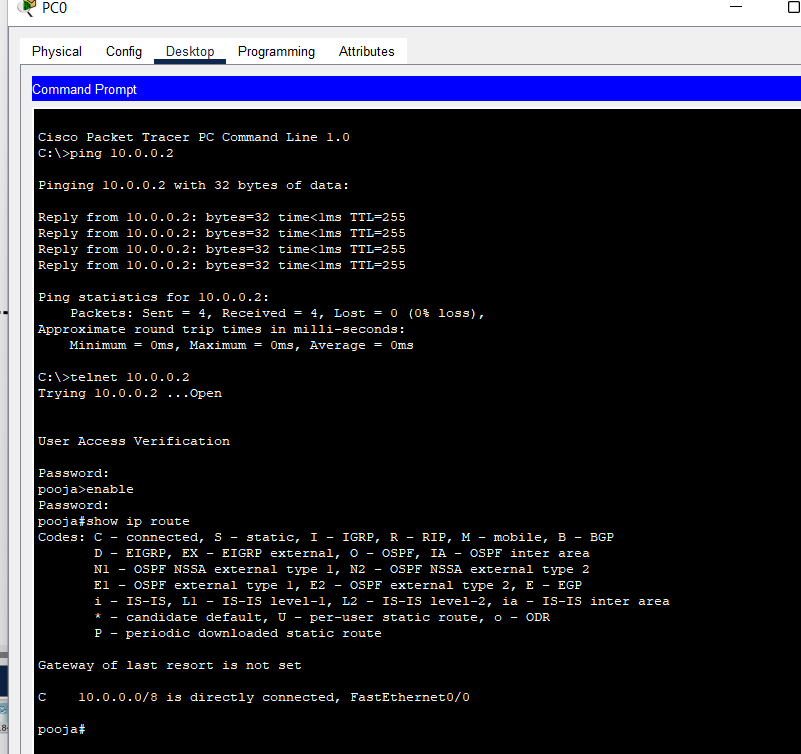




**Topology:**

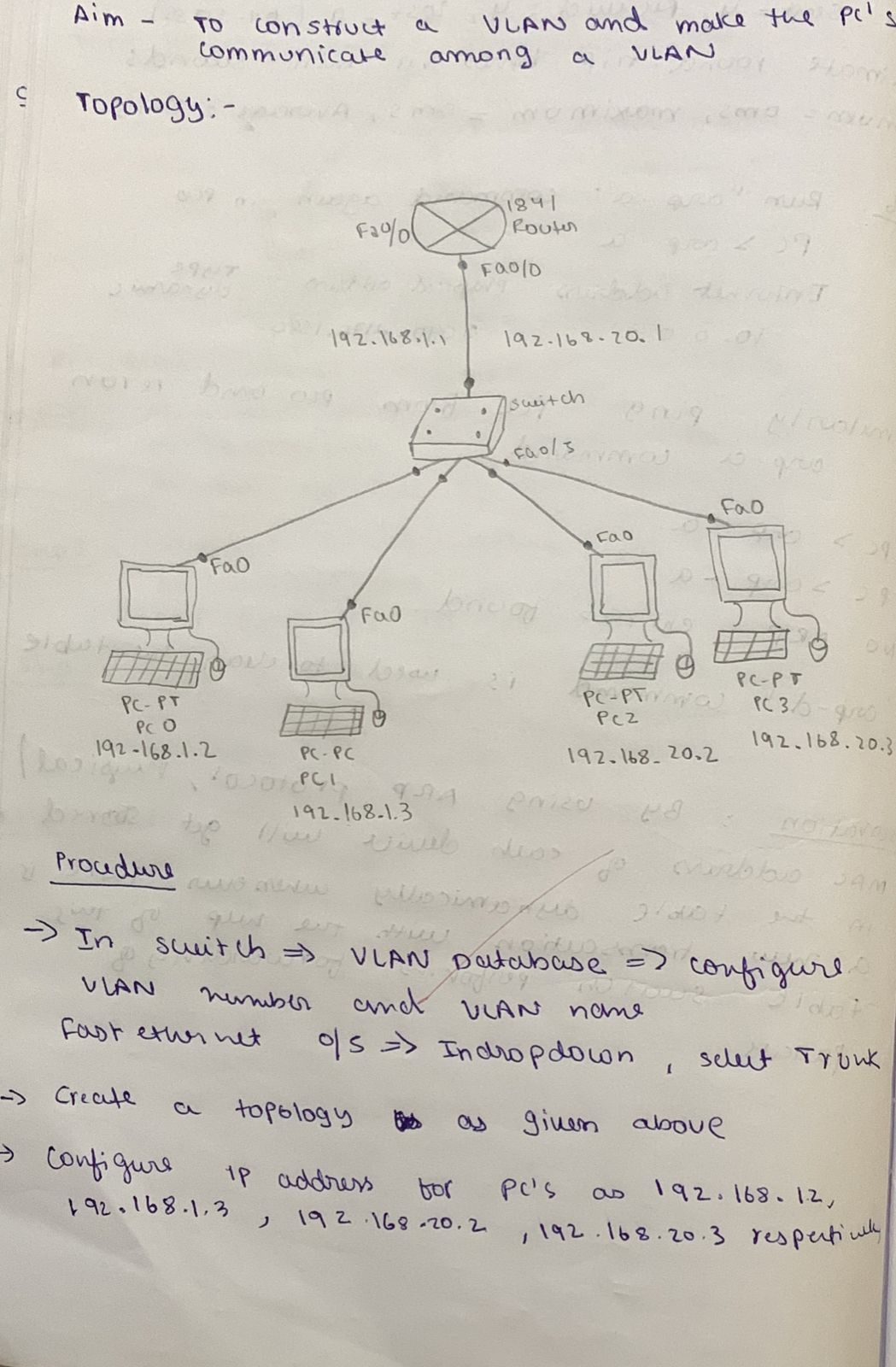
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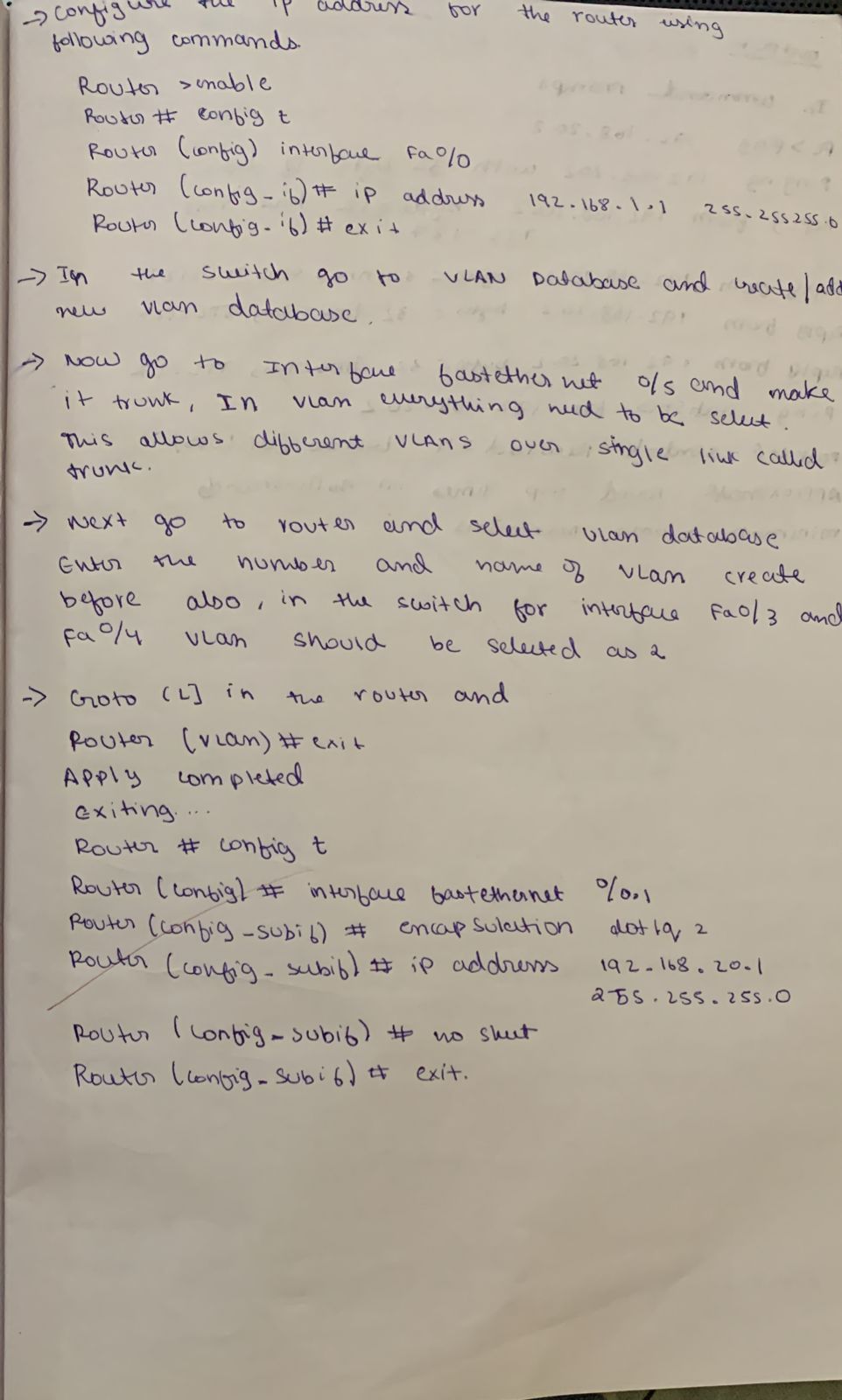
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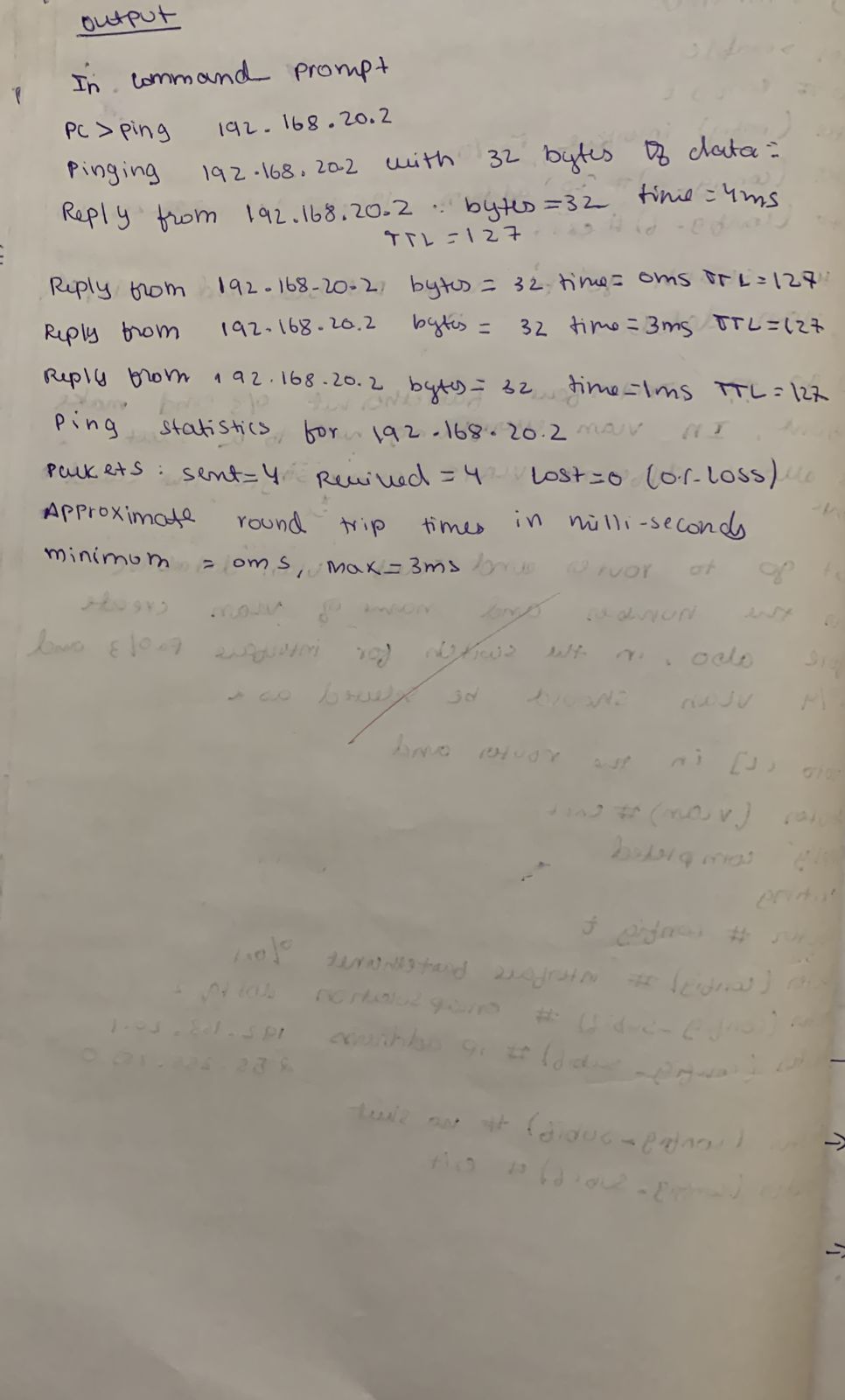
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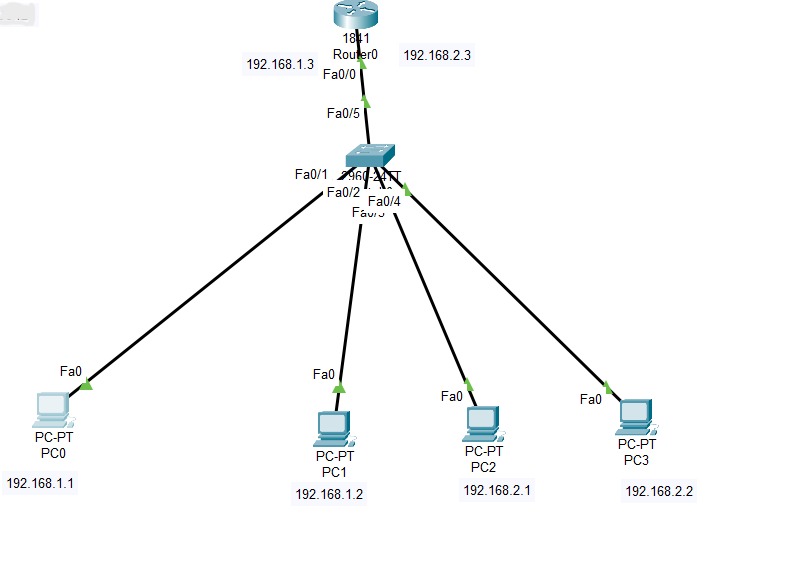
**Experiment 11**

**To construct a VLAN and make the PC’s communicate among a VLAN**

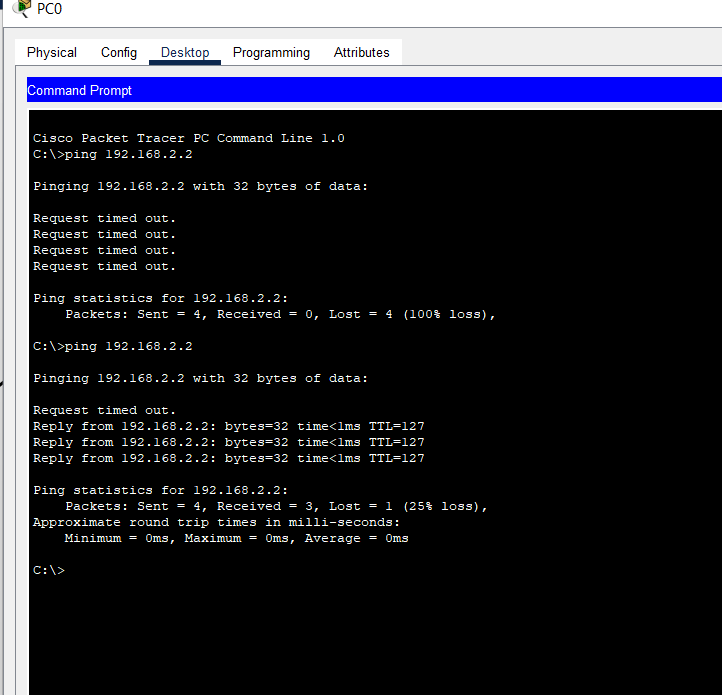




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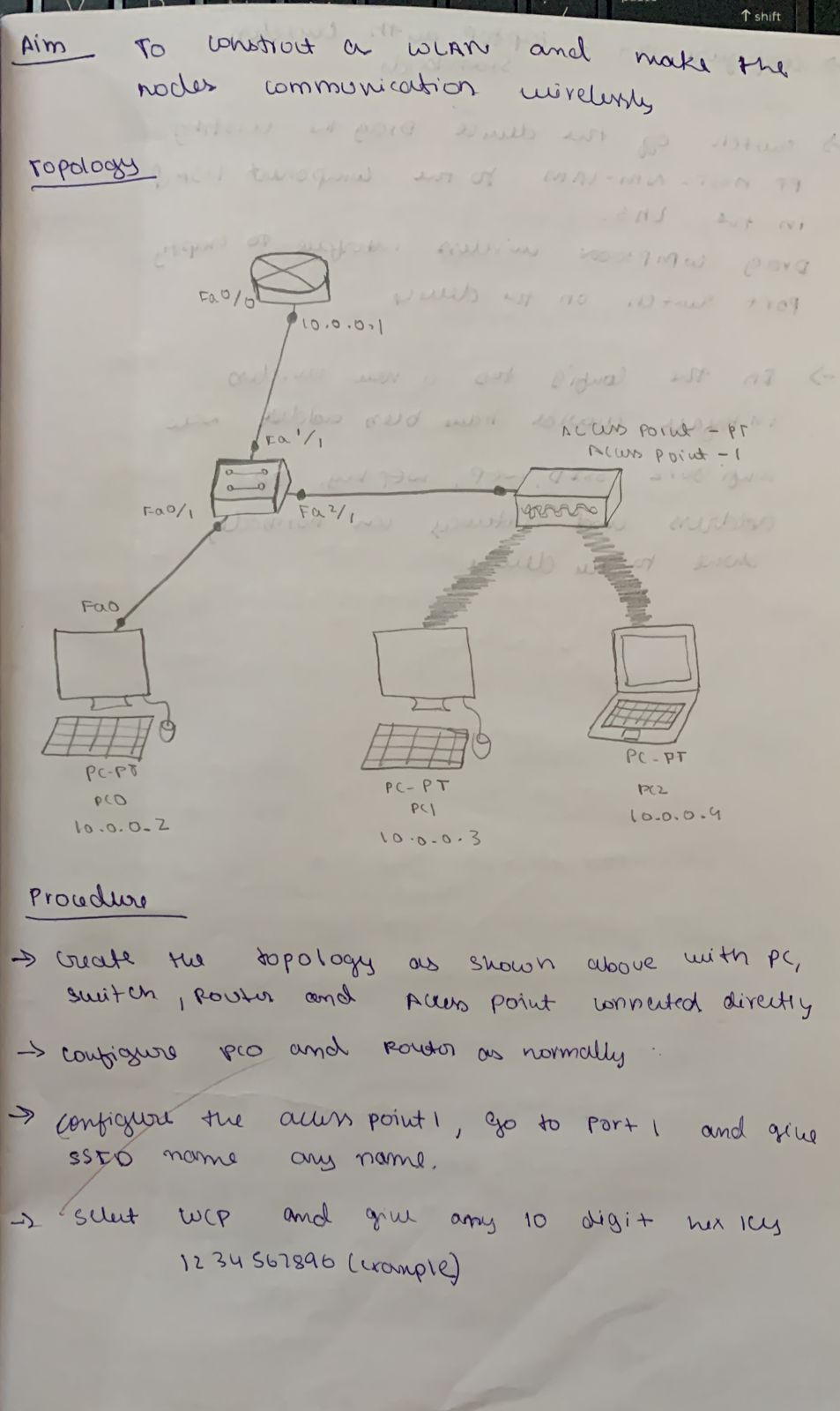


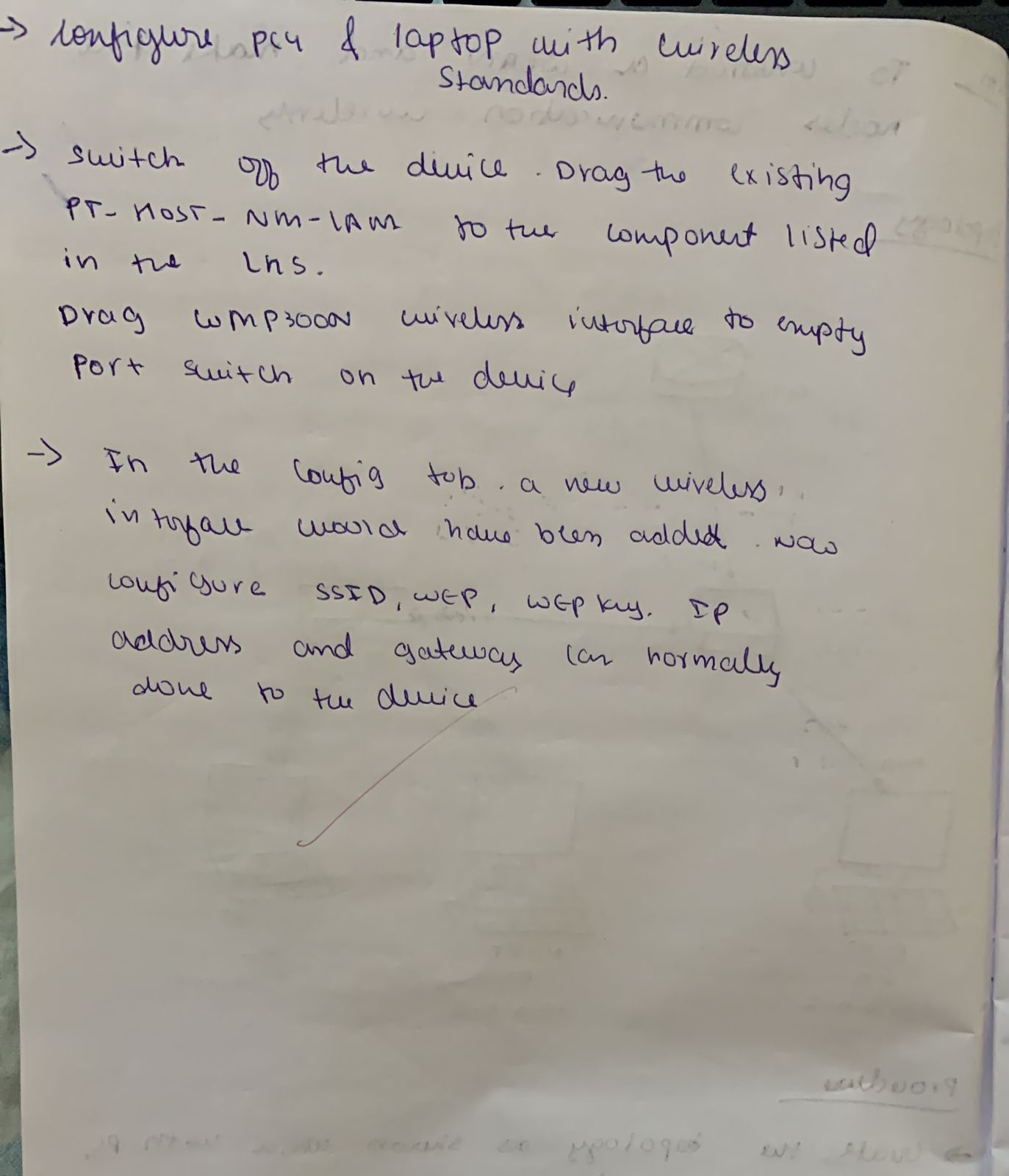
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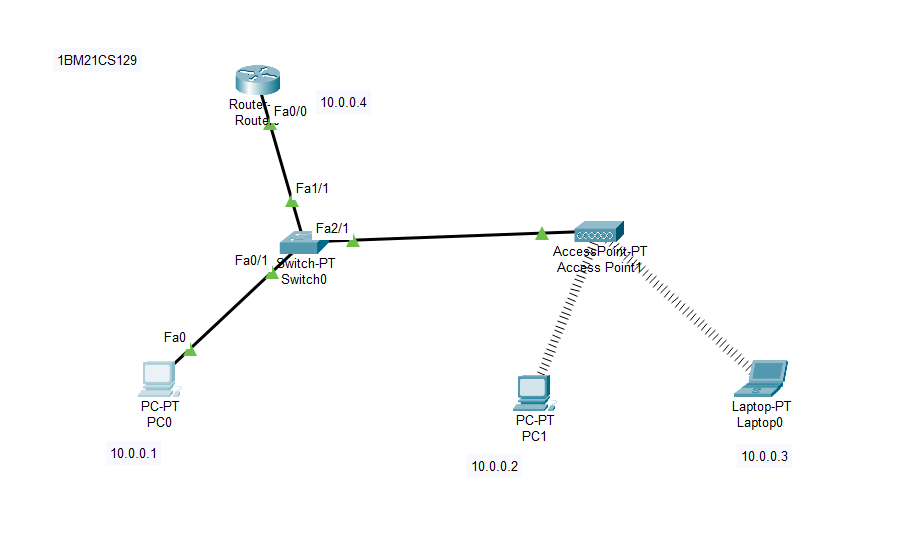
**Experiment 12**

**To construct a WLAN and make the nodes communicate wirelessly**

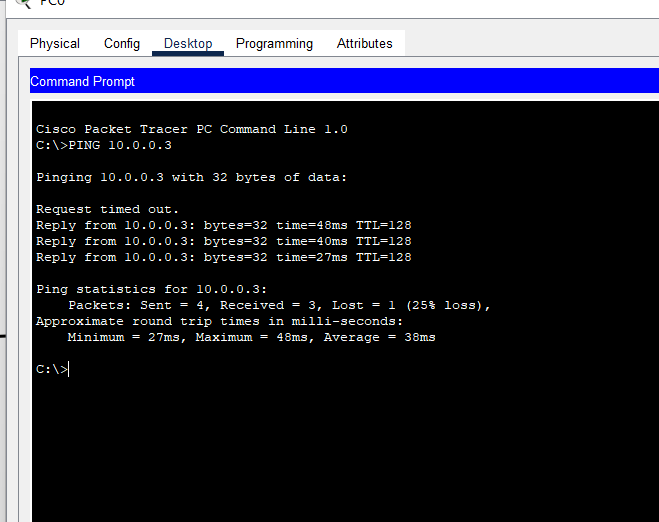




**Topology:**

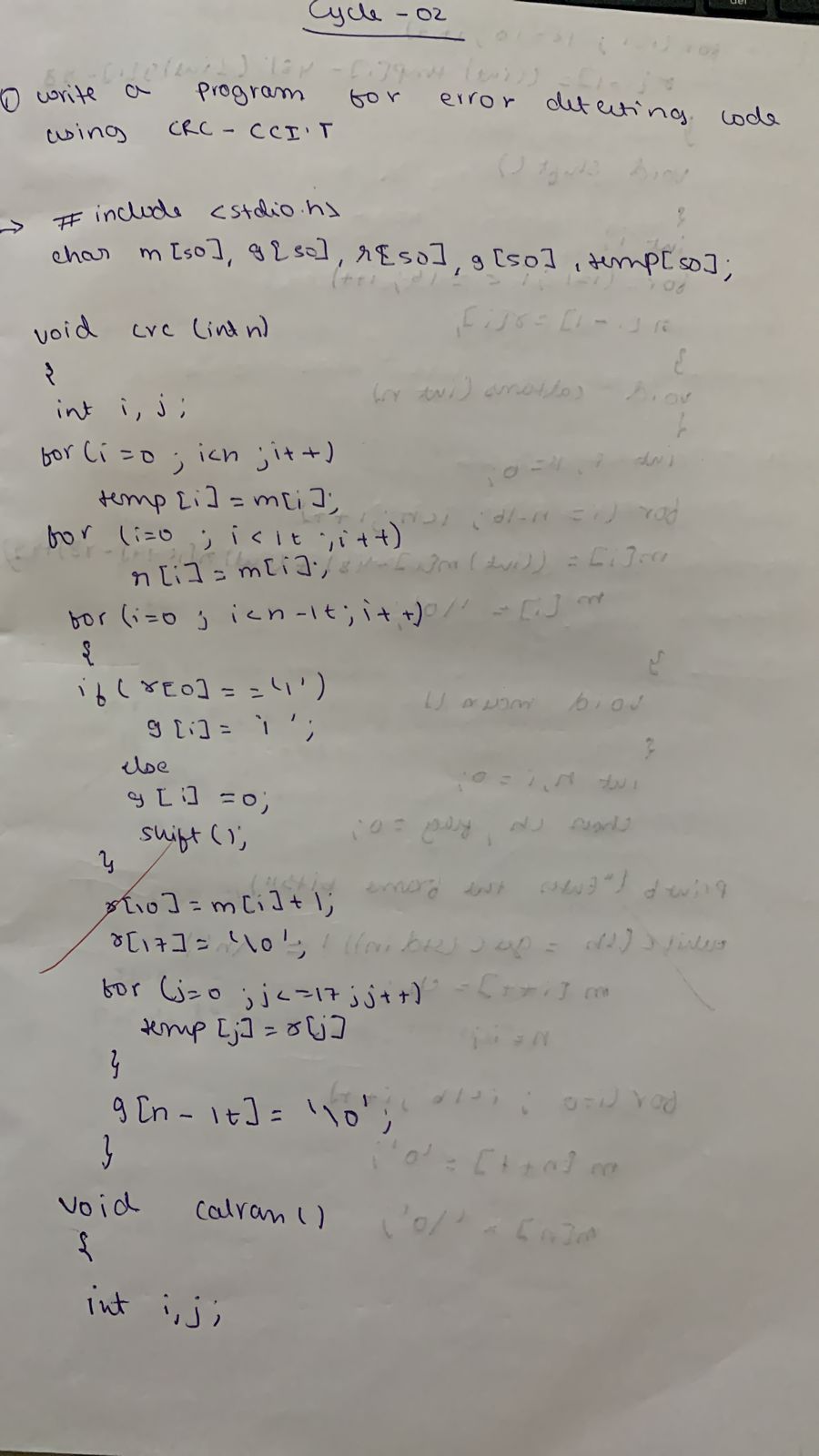
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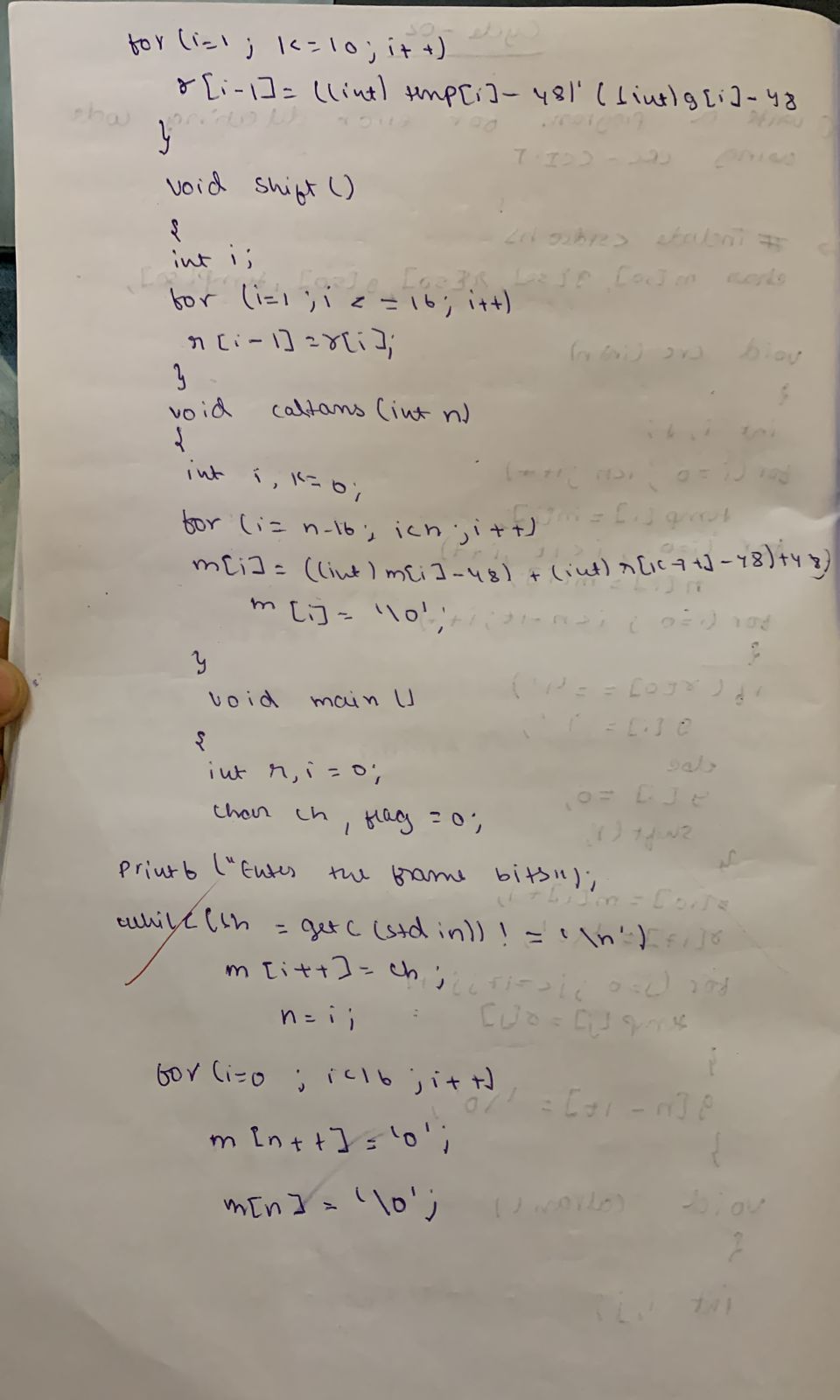
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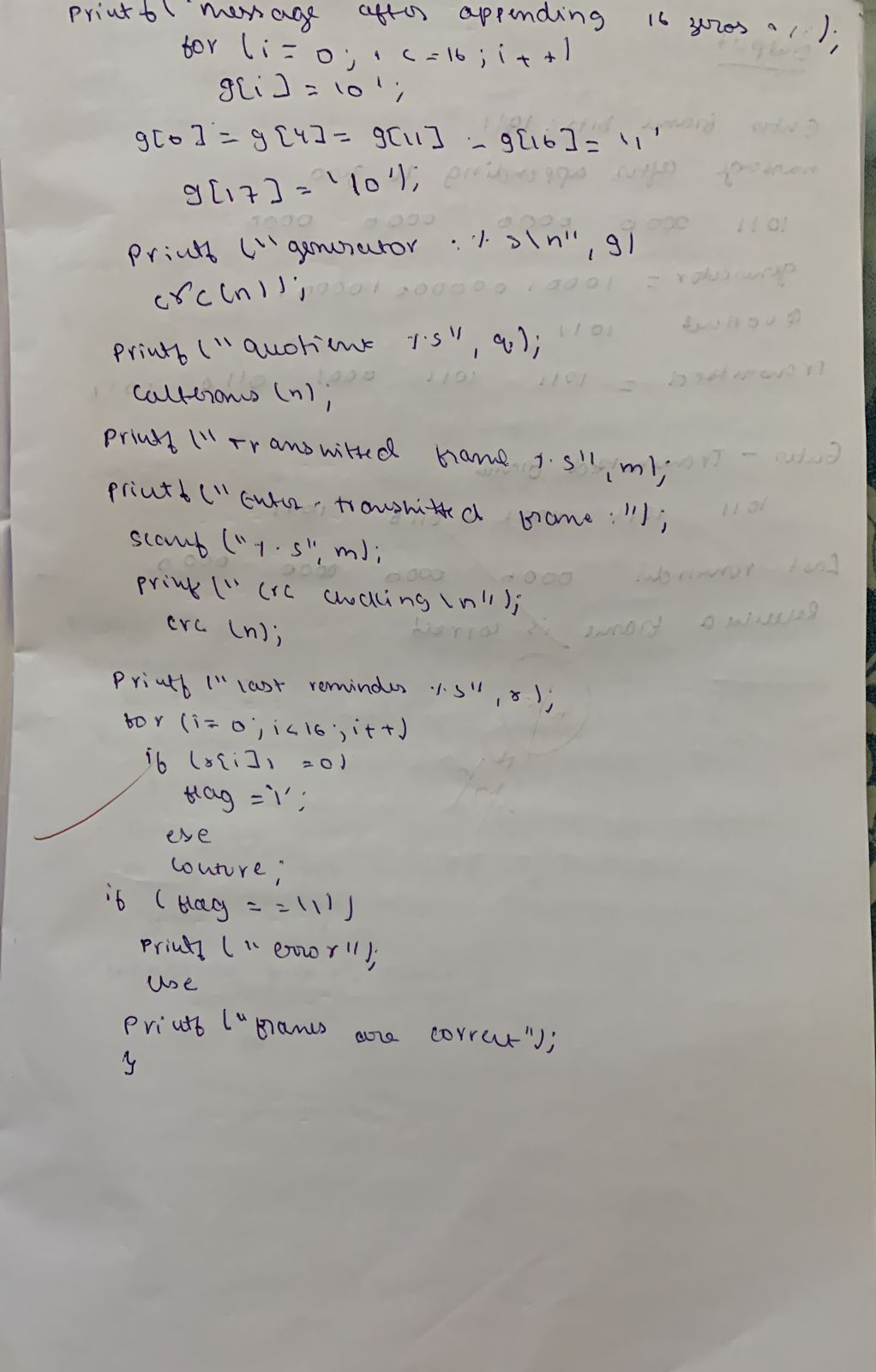
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**Experiment 13**

**Write a program for error detecting code using CRCCCITT (16-bits).**

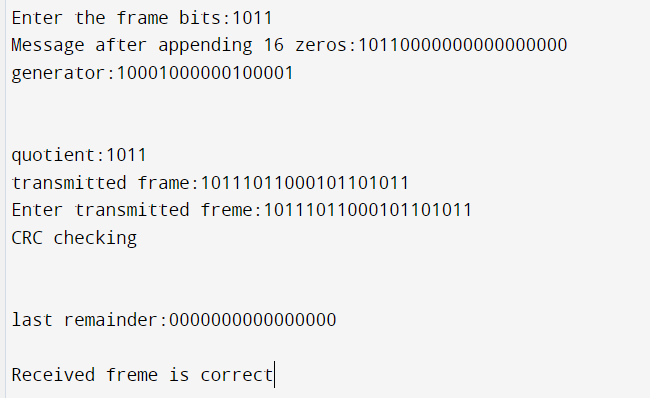






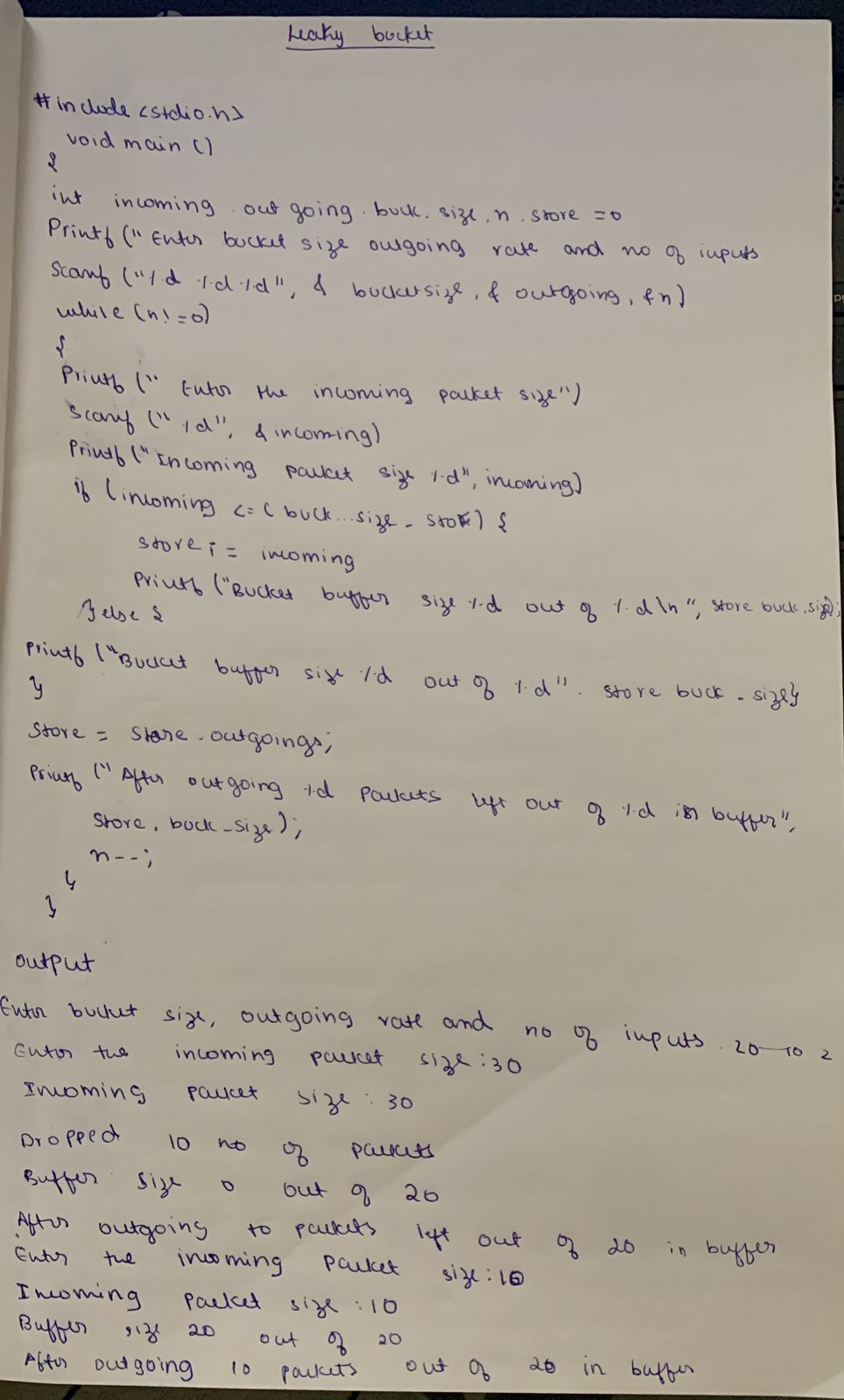


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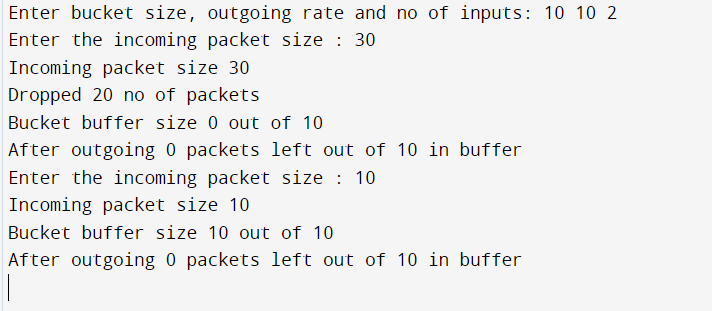
**Experiment 14**

**Write a program for congestion control using Leaky bucket algorithm.**



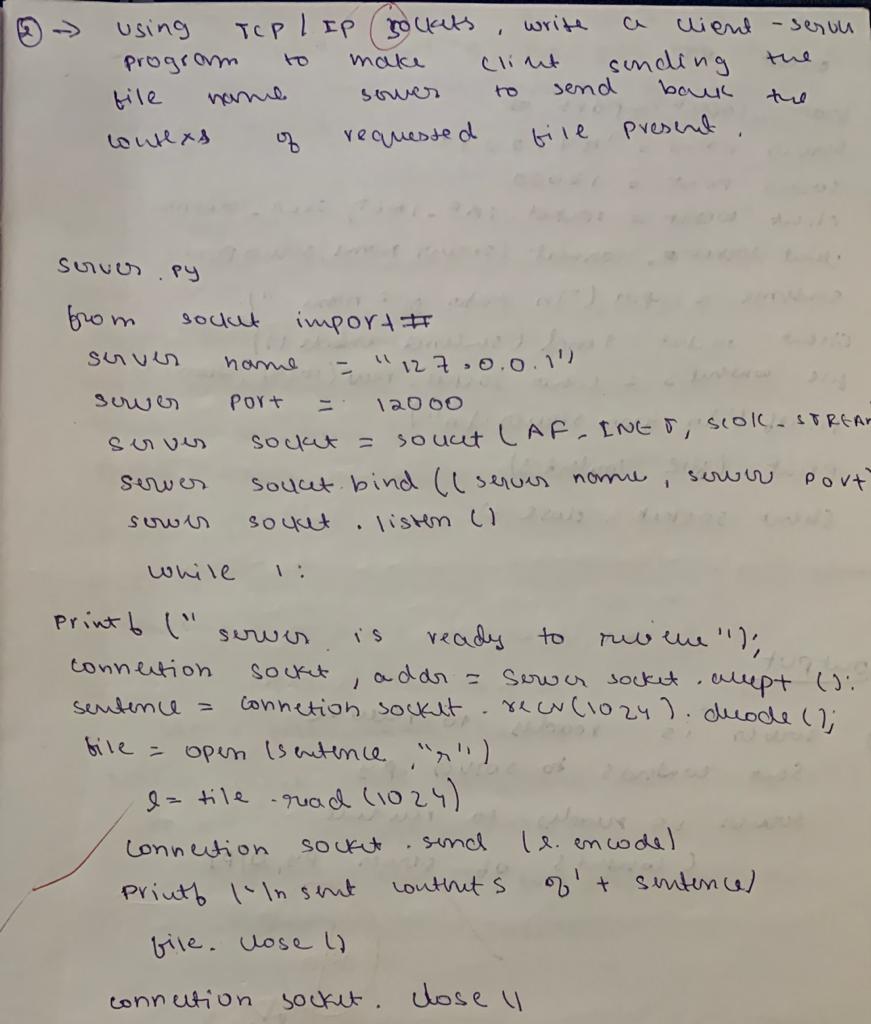
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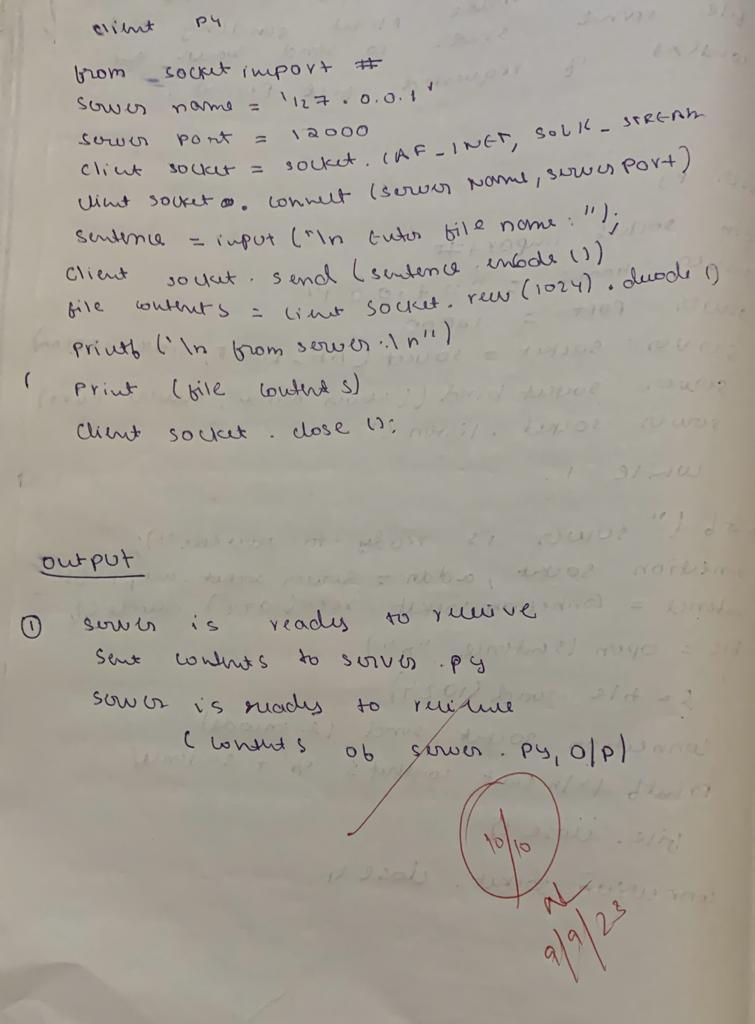
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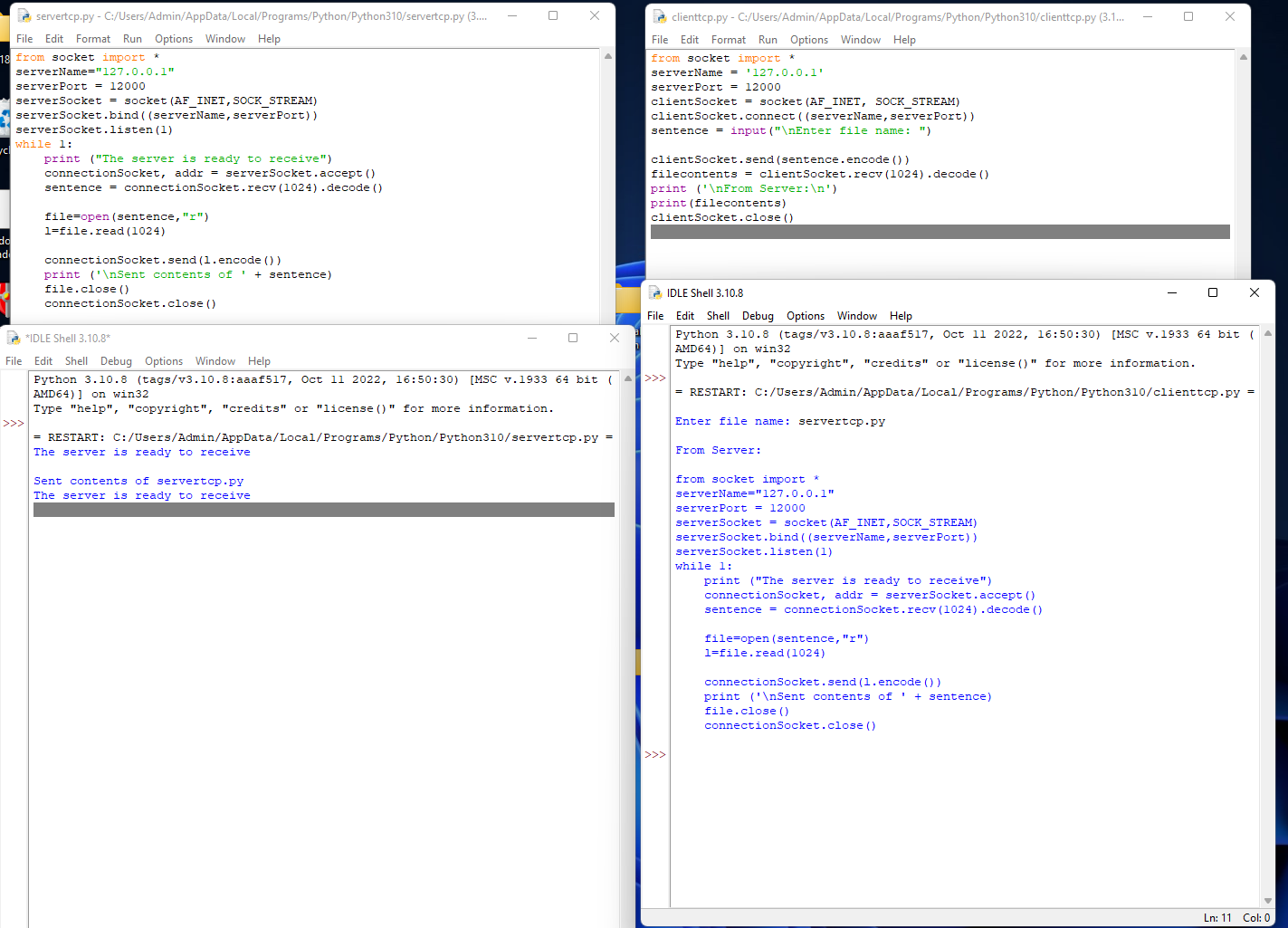
**Experiment 15**

**Using TCP/IP sockets, write a client-server program to make client sending the file name and the server to send back the contents of the requested file if present**



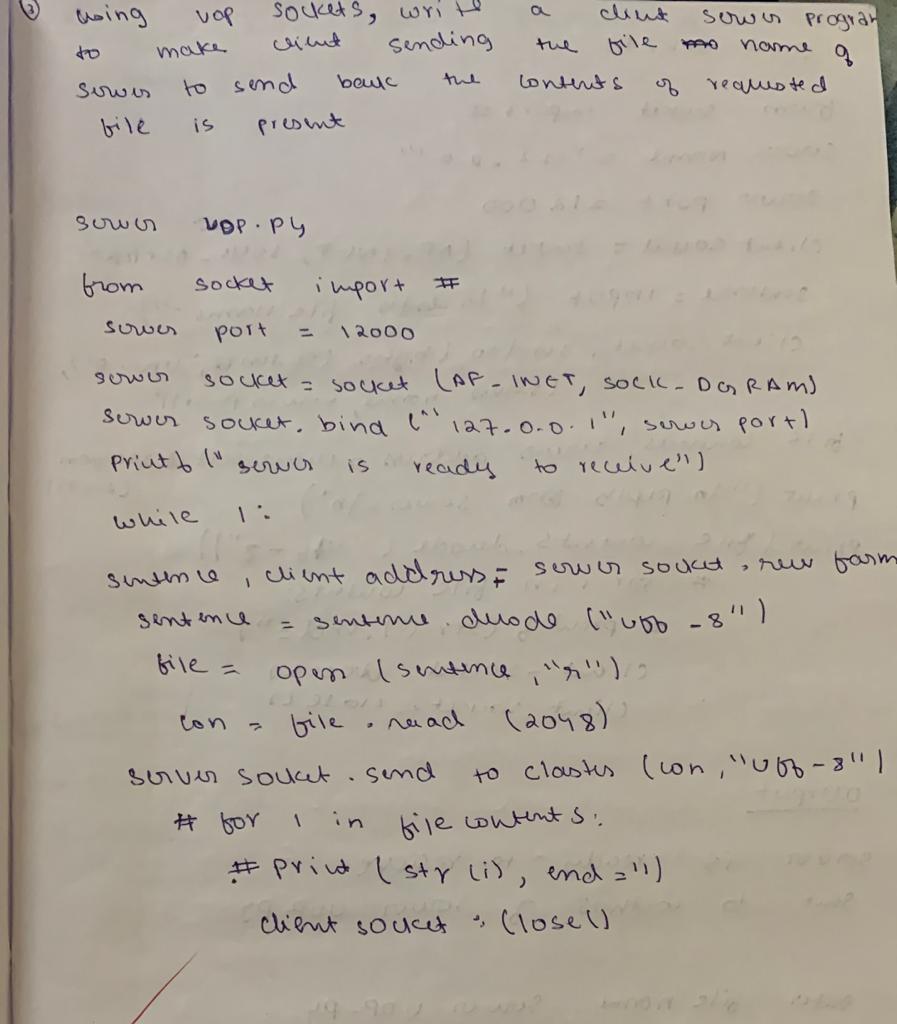


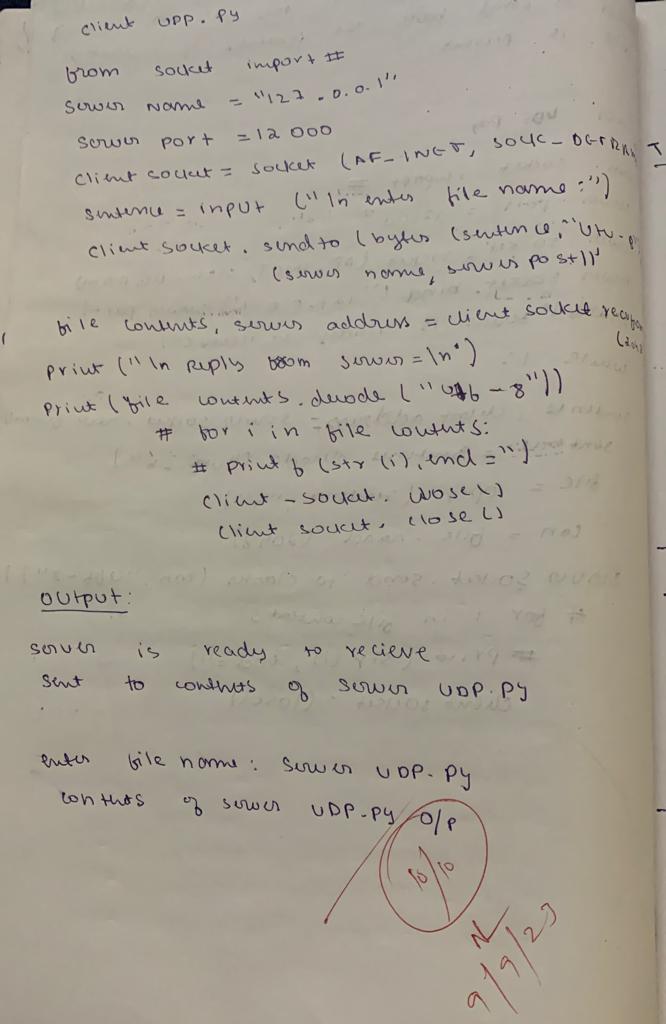
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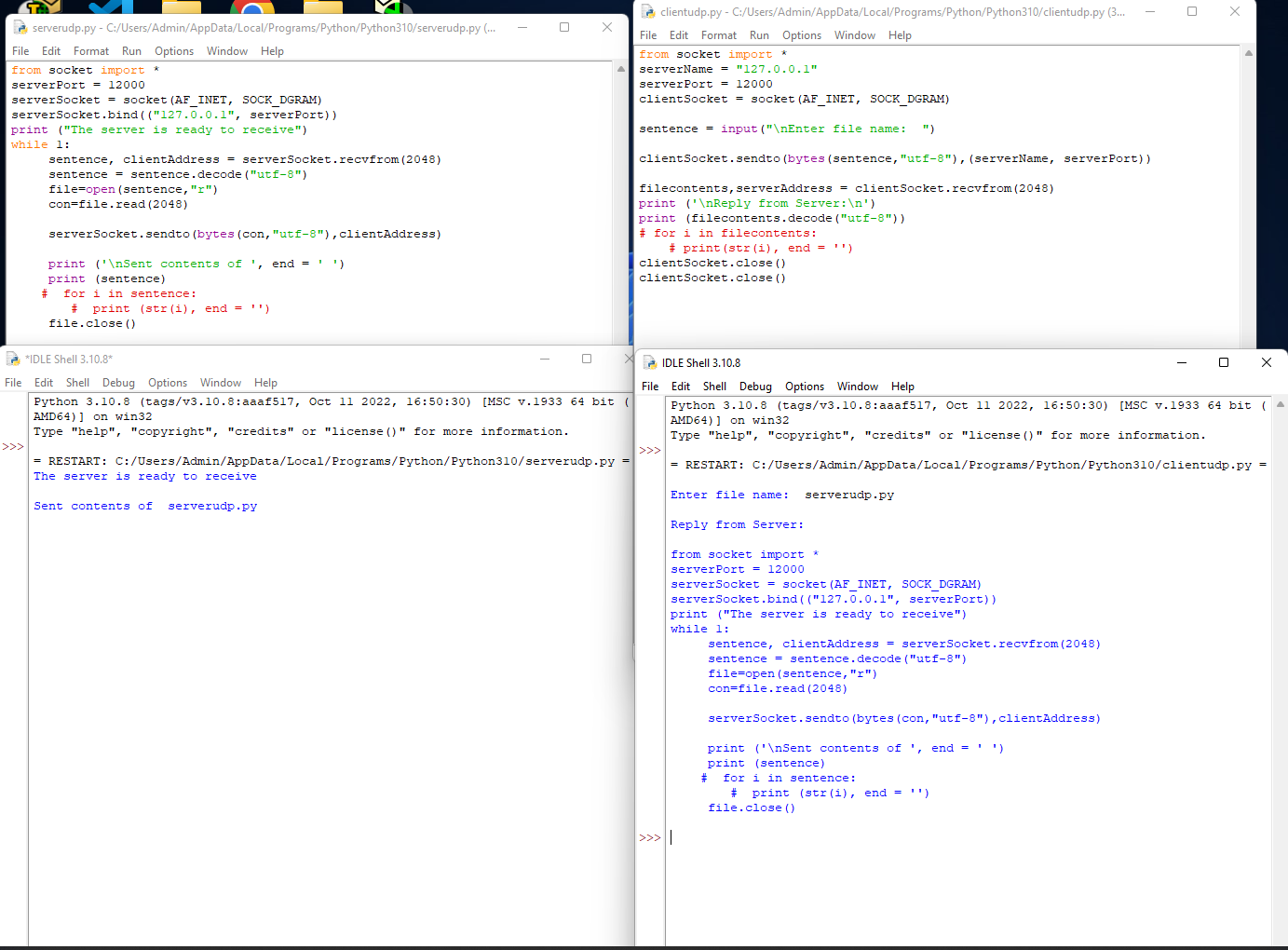
**Experiment 16**

**Using UDP sockets, write a client-server program to make client sending the file name and the server to send back the contents of the requested file if present**





**Output:**

****